Manitoba Water
Stewardship

Annual Report
2003 - 2004

Manitoba

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Manitoba Water Stewardship

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Manitoba

Gestion des ressources
hydriques Manitoba

Rapport annuel
2003 - 2004

Manitoba

MINISTER OF WATER STEWARDSHIP

Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

His Honour
The Honourable John Harvard, P.C., O.M.
Lieutenant Governor of Manitoba
Room 235, Legislative Buliding
Winnipeg, Manitoba R3C 0V8

Your Honour:

I am pleased to present you with the 1st Annual Report of Manitoba Water Stewardship, for the year ending March 31st, 2004.

Manitoba Water Stewardship was formed in response to public need and government responsibility to ensure the safety and quantity of our water sources, now and for future generations. This report details the department's many accomplishments, both as part of Manitoba Conservation and as a stand-alone department.

Water is a vitally important resource, which factors into all aspects of our daily lives, the health and well-being of Manitobans, all the living organisms in our environment, and our economy. The new department's mandate is many-fold:

- to protect, conserve and enhance the province's water, fishery and aquatic ecosystem resources for the equal benefit of present and future generations;
- to protect the safety of public drinking water supplies from source to tap;
- to assist in the provision of water and sewage facilities to rural communities;
- to protect people and property from floods; and
- to contribute to the sustainable development of the sectors of the provincial economy where water plays a major role.

The release of The Manitoba Water Strategy document in April of 2003 lays out a multi-year action plan for the conservation, protection and sustainable development of Manitoba's water resources. The strategy also demonstrates this department's accomplishments in many areas and on many water related issues, both within and beyond our provincial borders.

Manitoba Water Stewardship, through both new and ongoing initiatives, addressed several key priority areas, including:

- Lake Winnipeg with water quality initiatives, the Lake Winnipeg Action Plan and the Lake Winnipeg Stewardship Board;
- Drinking water quality safety with monitoring, sampling, and source to tap protection initiatives; and
- The drafting and introduction of Bill 22, *The Water Protection Act*.

Manitoba Water Stewardship staff are dedicated to providing effective programs and services which result in the betterment, safety and enjoyment of our water resources for all Manitobans. The Annual Report lays out detailed information on the programs and activities that take place around the province in service to Manitobans.

Respectfully submitted,

Steve Ashton
Minister of Water Stewardship

Manitoba

Deputy Minister of
Water Stewardship

Legislative Building
Winnipeg, Manitoba CANADA
R3C 0V8

The Honourable Steve Ashton
Minister of Water Stewardship
Legislative Building
Winnipeg, Manitoba R3C 0V8

Dear Minister:

I am pleased to present you with the 1st Annual Report of Manitoba Water Stewardship, for the year ending March 31st, 2004.

Manitoba Water Stewardship and its staff have many accomplishments over the past year, both as part of Manitoba Conservation and as a stand-alone department. The creation of Manitoba Water Stewardship presented some challenges, but also many opportunities. The staff's knowledge and dedication to ensuring the safety and sustainability of our water resources has resulted in many productive activities and positive outcomes. The following activities and outcomes highlight this department's past year's activities.

- The Manitoba Water Strategy was released in April 2003. The strategy identifies the initiatives and actions to be undertaken to address immediate issues in the policy areas of water conservation, water quality, use and allocation, water supply, flooding and drainage.
- Completed a major study into the factors affecting Escherichia coli bacteria at Lake Winnipeg beaches.
- Provided support to the Lake Winnipeg Stewardship Board to begin its work to assist the government achieve the commitments in the Lake Winnipeg Action Plan.
- Continued work on the Nutrient Management Strategy including focus on streams in southern Manitoba and on Lake Winnipeg.
- Provided on-going technical and scientific support on trans-boundary issues such as Devils Lake and Garrison. Legal action was launched on the North Dakota state outlet project.
- Bill 22, The Water Protection Act was developed and introduced into the House on March 4, 2004. This Bill reflects the priority legislative amendments recommended in The Manitoba Water Strategy.
- Consensus was reached with local stakeholder groups on a Swan Lake Basin Management Plan as well as on a draft Assiniboine Delta Aquifer management plan.
- Increased the number of conservation districts in the province from 9 to 16.
- Operated an additional 117 water level stations in the provincial network.
- Applied the Mike-11 hydrodynamic model to simulate various floods under the operation of the expanded floodway. This model provides detailed information on flood levels in the

Red River Valley. It is used in forecast mode for assessing the impact of various floods with the proposed expansion of the Red River Floodway.

- Established the Manitoba Floodway Expansion Authority in October 2003 to manage the expansion of the existing Red River Floodway.
- Provided technical support to the Lake Manitoba Regulation Advisory Committee. The committee was established by the minister to review how Lake Manitoba has been regulated and to recommend on future operation.
- Under the terms of the Canada- Manitoba Shellmouth Dam Consolidation Agreement managed consulting studies and participated in public reviews of activities identified under the agreement. The agreement includes adding gates to the spillway, compensation for past damages upstream of the reservoir, purchase of additional flood prone lands, and a study of impacts on downstream residents.
- Developed regulations for The Ground Water and Well Act.
- The groundwater monitoring work consisted of operating and storing data from 530 stations. Three hundred water quality tests were completed. In addition, during the year eight new monitoring stations were established
- Continued to be heavily involved in investigating the impacts of sewage, animal waste and other noxious materials on the groundwater systems.
- Sampling of provincial water quality observation wells installed as part of the Manitoba Rural Groundwater Quality Initiative.
- Co-operative studies were initiated with a number of groups at the U. of M. on a study site overlying a shallow sand aquifer in southeastern Manitoba. The overall study will examine soil and water issues related to cattle production on pasture/forage fields fertilized with liquid hog manure.
- Implemented or enhanced flood protection infrastructure for rural communities in the Red River Valley that were subject to flooding or the threat of flooding in 1997.
- Enhanced the level of protection and/or integrity of the secondary diking systems in order to minimize recurring costs associated with emergency diking during flood events.
- Of the six sites prioritized as suitable for community ring dike construction, four sites have been completed, one site is substantially complete and residents at the remaining site elected not to progress to construction.
- Administrative policies and procedures concerning licensing under The Water Rights Act (Act) were developed and/or clarified.

Respectfully submitted,

Norman B. Brandson
Deputy Minister of Water Stewardship

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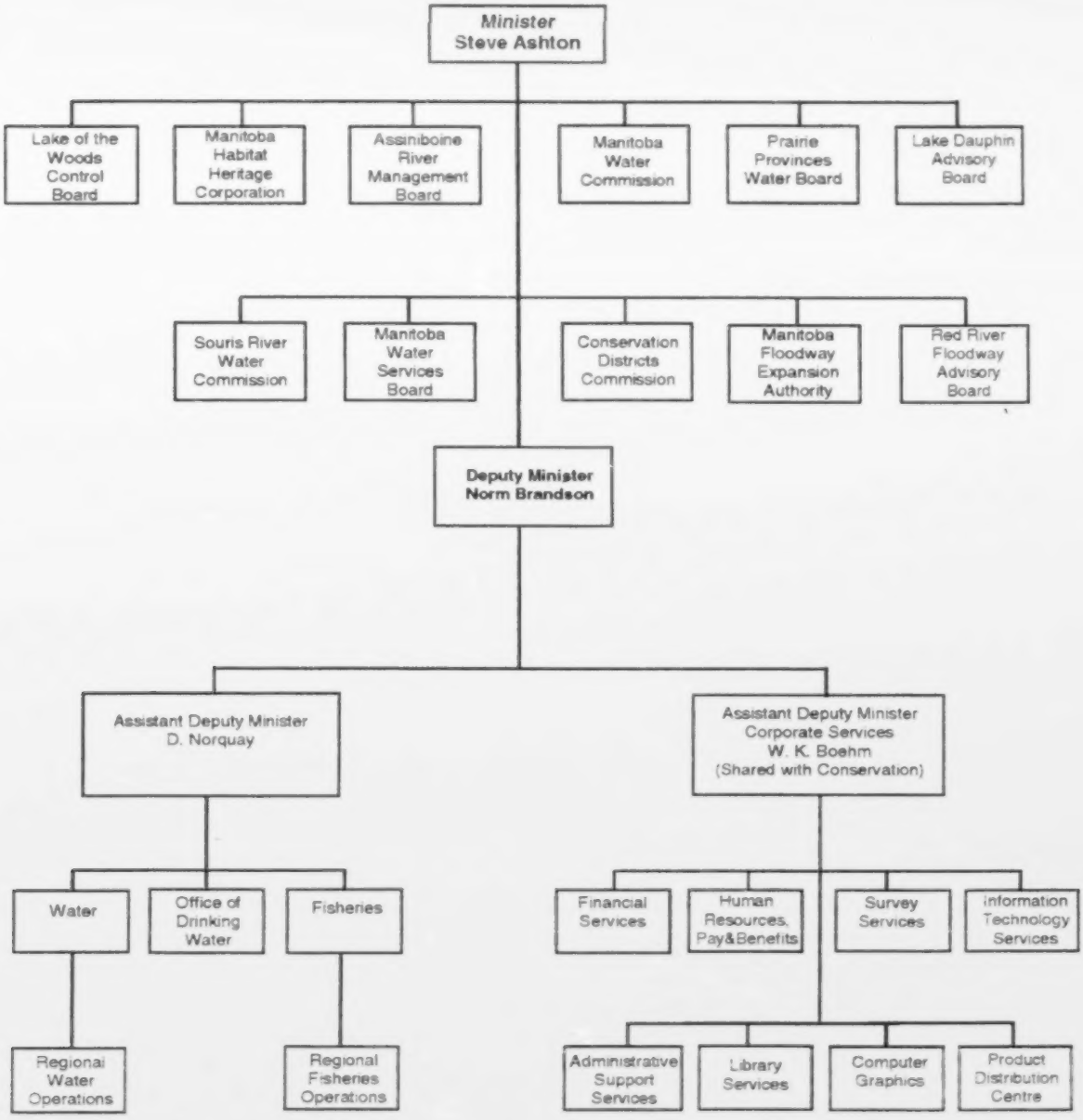
MANITOBA WATER STEWARDSHIP ORGANIZATION CHART EFFECTIVE APRIL 1, 2004



The organization Chart shown reflects the organization structure in place during the latter part of fiscal year 2003/04. It reflects the development of a new department, which was announced, November 3, 2003 called the Department of Water Stewardship.

GESTION DES RESSOURCES HYDRIQUES MANITOBA ORGANIGRAMME EN DATE DU 1er AVRIL 2004

Ministre
Steve Ashton
Commission de contrôle du lac des Bois
Société protectrice du patrimoine écologique du Manitoba
Comité consultatif de gestion de la rivière Assiniboine
Commission manitobaine de l'eau
Commission des eaux des provinces des Prairies
Comité consultatif du lac Dauphin
Commission de l'eau de la rivière Souris
Commission des services d'approvisionnement en eau du Manitoba
Commission des districts de conservation
Régie du projet d'expansion du canal de dérivation du Manitoba
Conseil consultatif sur l'exploitation du canal de dérivation
Sous-ministre
Norm Brandson
Sous-ministre adjoint
D. Norquay
Sous-ministre adjoint
Services à l'ensemble du ministère
W. K. Boehm
(conjointement avec Conservation)
Gestion de l'eau
Service de l'eau potable
Pêche
Services financiers
Ressources humaines, salaires et avantages sociaux
Relevés hydrographiques
Technologie de l'information
Opérations régionales, ressources hydriques
Opérations régionales, ressources de la pêche
Soutien administratif
Bibliothèque
Infographie
Centre de distribution des produits

Sustainable Development Activities and Accomplishments

Fisheries

Shared Responsibility and Understanding

Fisheries Branch continues to work with First Nations and other stakeholders to develop fisheries management approaches that accommodate constitutional obligations and other stakeholder interests. Staff assisted regional staff working with stakeholders in Dauphin Lake fishery; to negotiate an agreement and co-management plan governing harvest of walleye, and continued to develop a management approach with Regional staff and Sagkeeng First Nation for fisheries issues. A working group was also formed with Indian and Northern Affairs Canada's Regional Economic Development program to discuss and co-ordinate fisheries issues of mutual interest.

Prevention

Fisheries Branch continues to work toward protection of endangered aquatic species in Manitoba by working with the Federally appointed Committee On the Status of Endangered Wildlife in Canada (COSEWIC) and Manitoba's own Endangered Species Advisory Committee (ESAC). In the past year COSEWIC designated the shortjaw cisco as "threatened", which will afford it special protection under the new Canadian *Species At Risk Act*. Similarly, in June of 2003, ESAC reviewed four fish species; bigmouth buffalo, bigmouth shiner, chestnut lamprey and silver chub, all of, which were determined to be "not at risk".

Conservation and Enhancement

Fisheries Branch continues to administer the Fisheries Enhancement Initiative that provided funds to enhance fish populations and their habitat as well as funding educational opportunities. Watershed inventory studies were initiated for Vermilion River, Willow Creek, Little Souris River, Rat River and Upper Pembina River. Ongoing stream bank restoration through fencing, off-shore waterers, controlled crossings and revegetation work continues on Lake Wahtopanah, Minnedosa Lake, West Souris River, and Boggy Creek. This year, educational opportunities funded were presentations to school groups on fish, fish habitat and sport fishing by Don Lamont and Natural Resources Officers and the creation of a 3-D display case featuring Manitoba's fish species along with a brochure. Projects physically improving fish habitat included:

- enhancement of lamprey habitat in Brokenhead River,
- construction of riffles in Seine River,
- fish-way design on the Brokenhead River,
- purchase of aeration equipment for Hooper's, Shoal and Bower Lakes and Mary Jane reservoir,
- design of an outlet control structure for Whitemouth Lake, and
- assessment of fish habitat and fish utilization of the Black and O'Hanley Rivers.

Rehabilitation and Reclamation

Manitoba Water Stewardship, Fisheries Branch continues to assist the Nelson River Sturgeon Co-Management Board, who had its most successful sturgeon stocking year ever. The eggs taken from two female sturgeon subsequently produced 14,429 fingerlings that were stocked back into the Nelson River. Sturgeon stockings were highly publicized with local schools. A new rear-out facility was built at Jenpeg Generating Station with Fisheries Enhancement Initiative funding. This adds to the capacity at Grand Rapids Fish Hatchery and increases the number of fingerling sturgeon that can be raised.

Access to Information

Manitoba Water Stewardship, Fisheries Branch has developed a sustainable development website to integrate sustainable development concepts into the new Kindergarten-Senior IV Science: Manitoba Curriculum Framework of Outcomes. The site is a Manitoba first in integrating fisheries information into science curriculum via the Internet. The site was promoted at teacher workshops and conferences, including the Special Areas Group (Science) Workshop. Work continues with educators to develop exercises for Grades Senior III and IV, for implementation in fall 2004.

Manitoba Water Stewardship continues to participate in the Manitoba Envirothon by co-chairing the test-writing committee, preparing questions, and assisting in the field day and oral components. Envirothon is an annual Olympic-style academic and environmental program. High school students (Senior I to IV) are tested in four discipline areas (aquatics, forestry, soils, and wildlife) and an annual theme (this year: Natural Resources in an Urban Environment). This year, the competition was held at Brandon and 27 Manitoba school teams have entered. The winning team from Manitoba will represent their province at the National Canon Envirothon in West Virginia.

Water

Shared Responsibility and Understanding

Water management staff continues to work with various stakeholders in the establishment of basin, watershed and aquifer management plans. Administrative assistance is provided to several management advisory boards including the Winkler and Oak Lake Management Advisory Boards. The branch relies on water level and streamflow data collected under the Canada-Manitoba Hydrometric Agreement for operating water control works, flood forecasting, water management investigations and hydrologic studies.

Efficient Uses of Resources

Licensing and enforcement of water use projects and waterpower projects and the collection of water level, aquifer and stream flow data helps ensure the resource is available in the future.

Stewardship

A new Department of Water Stewardship was formed in 2003. It is responsible for water management, economic development and clean water initiatives. Manitoba's Water Strategy was released April 2003. The Strategy identifies the initiatives and action to be undertaken to address immediate issues in the policy areas of water conservation, water quality, user and allocation, water supply, flooding and drainage. A new Water Protection Act was drafted and introduced into the house for first reading. This Bill reflects the priority legislative amendments recommended in The Manitoba Water Strategy. The Drinking Water Safety Act was proclaimed and two regulations have been drafted. Work is proceeding on the development of the new Office of Drinking Water unit.

Access to Information

Information covering all aspects of the water resources is provided to the public through the Water Branch website and the Office of Drinking Water website. Specific information is provided to through open houses and public meetings. Public hearings were held on Wuskwatim Hydroelectric generating and transmission project.

Introduction

Manitoba Water Stewardship has a mandate to protect, conserve and enhance the province's water and fishery resources and aquatic ecosystems, for the equal benefit of present and future generations; to protect the safety of public drinking water supplies from source to tap; to assist in the provision of water and sewage facilities to rural communities; to protect people and property from floods; and to contribute to the sustainable development of the sectors of the provincial economy where water plays a major role.

The department is responsible for all water management and clean water initiatives. In this regard it will work to improve water standards and water infrastructure across Manitoba.

The department carries out its mandate in a co-ordinated way and in collaboration with Manitobans and other governments, through the delivery of policy development, watershed planning, and scientific research, monitoring and forecasting services, and resource management programs; the administration of inspection, testing, and regulatory compliance programs and other initiatives; the administration of water rights and drainage licencing; the provision of support and technical assistance to municipalities in the construction of water and sewer infrastructure; and the construction, maintenance, management and operation of Manitoba's waterway, drainage and flood protection infrastructure.

The department is made up of a number of operating units as outlined in the organization chart on page 3. It should be noted that this organization structure is still evolving.

Highlights

Fisheries

- Whiteshell Fish Hatchery, Visitor Centre, gave tours to over 4,345 people from June to the September long weekend. Interpretative exhibits include information on species reared at the Hatchery, life stages of fish, how water is used, history of the Hatchery, and ecosystem interaction.

- The Branch continued to participate in the national Invasive Species, Aquaculture and Recreational Fishing Task Groups and co-chair the national Freshwater Fish Strategy Task Group. These Groups, reporting to Canadian Council of Fisheries and Aquaculture Ministers, are developing co-ordinated action plans that involve stakeholders and maximize management efficiency and effectiveness.

- The Fisheries Enhancement Initiative funded 264 projects directed at enhancing fish populations and their habitat as well as funding educational opportunities. Watershed inventory studies were initiated for Vermilion River, Willow Creek, Little Souris River, Rat River and Upper Pembina River. Ongoing stream bank restoration through fencing, off shore waterers, controlled crossings and revegetation work continues on Lake Wahtopanah, Minnedosa Lake, West Souris River, and Boggy Creek. This year, educational opportunities funded were presentations to school groups on fish, fish habitat and sport fishing and the creation of a 3-D display case featuring Manitoba's fish species along with a brochure. Projects physically improving fish habitat included:
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  - design of an outlet control structure for Whitemouth Lake and
  - assessment of fish habitat and fish utilization of the Black and O'Hanley Rivers.

- The Nelson River Sturgeon Co-management Board had its most successful sturgeon stocking year ever. The eggs taken from two female sturgeon subsequently produced 14, 429 fingerlings that were stocked back into the Nelson River. Sturgeon stockings were highly publicized with local schools. A new rear-out facility was built at Jenpeg Generating Station with Fisheries Enhancement Initiative Funding. This adds to the capacity at Grand Rapids Fish Hatchery and increases the number of fingerling sturgeon that can be raised.

- Continued to work toward protection of endangered aquatic species in Manitoba by working with the Federally appointed Committee On the Status of Endangered Wildlife in Canada (COSEWIC) and Manitoba's own Endangered Species Advisory Committee (ESAC). In the past year COSEWIC designated the shortjaw cisco as "threatened", which will afford it special protection under the new Canadian *Species At Risk Act*. Similarly, in June of 2003, ESAC reviewed four fish species, bigmouth buffalo, bigmouth shiner, chestnut lamprey and silver chub, all of which were determined to be "not at risk".

- Continued to participate in *Manitoba Envirothon* by co-chairing the test-writing committee, preparing questions, and assisting in the field day and oral components. *Envirothon* is an annual Olympic-style academic and environmental program. High

school students (Senior I to IV) are tested in four discipline areas (aquatics, forestry, soils, and wildlife) and an annual theme (this year: Natural Resources in an Urban Environment). This year the competition was held at Brandon; 27 Manitoba school teams have entered. The winning team from Manitoba will represent their province at the *National Canon Envirothon* in West Virginia.

- Continued to work with First Nations and other stakeholders to develop fisheries management approaches that accommodate constitutional obligations and other stakeholder interests. Head office staff assisted regional staff working with stakeholders in Dauphin Lake fishery, to negotiate an agreement and co-management plan governing harvest of walleye, and continued to develop a management approach with Regional staff and Sagkeeng First Nation for fisheries issues. A working group was also formed with Indian and Northern Affairs Canada's Regional Economic Development program to discuss and co-ordinate fisheries issues of mutual interest.

- A Sustainable Development Website was developed to integrate sustainable development concepts into the new Kindergarten-Senior IV Science: Manitoba Curriculum Framework of Outcomes. The site is a Manitoba first in integrating fisheries information into science curriculum via the Internet. The site was promoted at teacher workshops and conferences, including the Special Areas Group (Science) workshop. Work will continue with educators to develop exercises for Grades Senior III to IV, for implementation in fall 2004.

- Winnipeg's Urban Angling Partnership, working with City Cats Guiding Service, provided Winnipeg residents with an opportunity to participate in the annual fall Urban Fishing Derby.

- Recreational Fishing League, for youth aged 9-15 years, entered its fourth year. Eighteen teams of six to eight children and two coaches, fished once a week for six weeks. Teams were awarded points by lengths of fish caught to determine a League winner. Results were posted on a Website (www.mwf.mb.ca/Leaque) to allow participants to follow League action. Partners included Manitoba Wildlife Federation, Mid-Canada Marine Dealers Association, Pure Fishing (Berkley Canada), and Recreation Connections. An expanded program is planned for 2004 with Manitoba Wildlife Federation as lead organization.

Water Management

- Manitoba's Water Strategy was released April 2003. The Strategy identifies the initiatives and action to be undertaken to address immediate issues in the policy areas of water conservation, water quality, use and allocation, water supply, flooding and drainage.
- Public hearings were held on Wuskwatim Hydroelectric generating and transmission project.
- Lake Winnipeg Stewardship Board members were appointed under the Lake Winnipeg Action Plan.
- Environmental licensing process for expansion of Red River Floodway is underway through the Environment Act of Manitoba and Environmental Assessment Act of Canada.
- The number of Conservation Districts expanded from 9 to 16.
- Final report on the Clean Environment Commissions Review of the City of Winnipeg's waste water systems was completed.

- New Department of Water Stewardship was formed. It is responsible for water management, economic development and clean water initiatives.
- A new Water Protection Act was drafted and introduced into the house for first reading. This Bill reflects the priority legislative amendments recommended in The Manitoba Water Strategy.
- The Floodway Authority Act, was proposed. This legislation will establish a separate, independent and accountable authority to complete the expansion of the Red River Floodway on behalf of Manitoba residents. The Authority would own the floodway's physical assets and be responsible for its expansion and maintenance however, the operational authority would remain with Manitoba Water Stewardship.
- Province and Government of Canada signed a $240 million agreement for the Red River Floodway Expansion.
- Manitoba launched a legal challenge in the form of an appeal against North Dakota's Devils Lake water diversion project.
- Responded to water quality issues on Lake Winnipeg that led to the posting of advisory signs at two beaches due to elevated E. coli bacteria and two beaches due to toxic algae.
- Community ring dike construction continued.

Office of Drinking Water

- The Drinking Water Safety Act was proclaimed and two regulations have been drafted.
- Work is proceeding on the development of the new Office of Drinking Water unit.
- Development of a public web site.

Manitoba Habitat Heritage Corporation

- The Habitat Enhancement Fund was provided to the Critical Wildlife Habitat Program to support stewardship initiatives, resource inventories, land management and extension initiatives.

Manitoba Water Services Board

- Responsible for the Sewer and Water Program which provides financial and technical assistance to municipalities to develop water and sewer systems.
- Responsible for the Conservation Districts Programs such as water management, soil conservation, water storage, wildlife habitat, historic resources and recreation, public education, administration and a variety of other programs that promote sustainable resource management.

Introduction

Gestion des ressources hydriques Manitoba a le mandat de protéger, de conserver et d'améliorer les ressources hydriques, les ressources de la pêche et l'écosystème aquatique de manière à ce que les générations actuelles et à venir puissent en profiter tout autant; de protéger l'approvisionnement en eau potable de la source au robinet; d'aider à la mise en place de réseaux de distribution d'eau et d'égouts dans les collectivités rurales; de protéger les gens et les biens contre les inondations; et de contribuer au développement durable des secteurs de l'économie provinciale pour lesquels l'eau joue un rôle majeur.

Le ministère est responsable de tous les projets de gestion et d'assainissement de l'eau. Il cherche à cet égard à améliorer les normes et les infrastructures hydrauliques dans l'ensemble du Manitoba.

Le ministère s'acquitte de son mandat de façon coordonnée et en collaboration avec les Manitobains et les autres gouvernements, en assumant les tâches suivantes : élaboration de la politique, planification hydrographique, recherche scientifique, services de surveillance et de prévision et programmes de gestion de la ressource; administration des programmes d'inspection, d'essais et d'application de la réglementation entre autres initiatives; administration des droits relatifs à l'eau et des permis de drainage; soutien technique aux municipalités construisant l'infrastructure du service d'eau et d'égout; et construction, entretien, gestion et opération de l'infrastructure des voies navigables, de drainage et de lutte contre les inondations.

Le ministère regroupe un certain nombre d'unités administratives tel qu'illustré dans l'organigramme de la page 4 . Il est à noter que cette structure organisationnelle n'est pas définitive.

Faits saillants

Pêche

- Le personnel du centre d'accueil de la pisciculture de Whiteshell a fait visiter les lieux à 4 345 personnes entre juin et le week-end de la fête du Travail. Les panneaux d'interprétation fournissent des renseignements sur les espèces élevées à la pisciculture, les stades du développement des poissons, la façon dont l'eau est utilisée, l'histoire de la pisciculture et l'interaction de l'écosystème.

- La Direction continue de participer aux travaux des groupes de travail sur les espèces envahissantes, l'aquaculture et la pêche récréative, et de coprésider le groupe de travail national sur la stratégie relative aux poissons d'eau douce. Ces groupes de travail, qui rendent compte au Conseil canadien des ministres des Pêches et de l'Aquaculture, élaborent des plans d'action concertés avec la participation des intervenants, assurant ainsi une gestion des plus efficaces.

- Dans le cadre du Projet de mise en valeur de la pêche, on a financé 264 projets visant à améliorer l'habitat des populations de poissons ainsi que des projets d'enseignement. On a entrepris l'inventaire du bassin hydrographique des cours d'eau suivants : Vermilion River, Willow Creek, Little Souris River, Rat River et Upper Pembina River. Les travaux de restauration des berges par différents moyens (clôturage, aménagement d'auges, croisement contrôlé, restauration de la végétation) se poursuivent pour différents points d'eau : lac Wahtopanah, lac Minnedosa, West Souris River et Boggy Creek. Les projets d'enseignement financés au cours de l'année comprenaient les exposés sur les poissons, leur habitat et la pêche sportive présentés aux groupes scolaires, et la création d'une vitrine d'exposition en trois dimensions sur les espèces de poissons du Manitoba, qui s'accompagne d'une brochure. Les projets qui ont permis d'améliorer l'habitat des poissons comprenaient :
  - l'amélioration de l'habitat de la lamproie de la rivière Brokenhead;
  - la construction de zones à courant dans la rivière Seine;
  - la conception d'une passe à poissons pour la rivière Brokenhead;
  - l'achat d'équipement d'aération pour les lacs Hooper's, Shoal et Bower et le réservoir Mary Jane;
  - la conception d'une structure de contrôle du déversement pour le lac Whitemouth;
  - l'évaluation de l'habitat et de l'utilisation du poisson des rivières Black et O'Hanley.

- Le comité de cogestion de l'esturgeon du fleuve Nelson a connu sa meilleure année d'ensemencement. Les œufs prélevés sur deux femelles ont produit 14 429 alevins qui ont été ensemencés dans le fleuve Nelson. L'ensemencement d'esturgeons a été grandement publicisé dans les écoles locales. On a construit une nouvelle installation d'élevage à la centrale hydroélectrique de Jenpeg avec l'aide financière du Projet de mise en valeur de la pêche, augmentant ainsi la capacité de la pisciculture de Grand Rapids et le nombre d'alevins d'esturgeons pouvant être élevés.

- Les efforts visant la protection des espèces aquatiques menacées de disparition au Manitoba se sont poursuivis en collaboration avec le Comité sur le statut des espèces menacées de disparition au Canada (CSEMDC), nommé par le gouvernement fédéral, et le Comité consultatif sur les espèces menacées de disparition (CCEMD), nommé par le Manitoba. Au cours de la dernière année, le CSEMDC a désigné le cisco à mâchoires égales comme « espèce menacée », ce qui lui accordera une protection spéciale en vertu de la nouvelle *Loi sur les espèces en péril* du Canada. De même, en juin 2003, le CCEMD a examiné quatre espèces de poisson, soit le buffalo à grande bouche, le mené à grande bouche, la lamproie brune et la perche-truite, et déterminé que ces espèces n'étaient pas en péril.

- La Direction a continué de participer au *Manitoba Envirothon* en coprésidant le comité de rédaction du test, en préparant les questions et en prêtant main-forte à l'organisation de la journée et des composantes orales. Le *Envirothon* est un programme scolaire et environnemental s'inspirant des Olympiques. Il met à l'épreuve les connaissances d'élèves du secondaire (secondaires 1 à 5) dans quatre disciplines (vie aquatique, foresterie, sols et faune) à l'intérieur d'un thème donné (le thème de cette année était les ressources naturelles en milieu urbain). Cette année, le concours se tenait à Brandon et 27 équipes de différentes écoles du Manitoba y ont participé. L'équipe gagnante du Manitoba représentera la province au *National Canon Envirothon*, qui se tiendra en Virginie occidentale.

- La Direction a continué de collaborer avec les Premières nations et d'autres intervenants à l'élaboration de modes de gestion des pêches qui concilient les obligations constitutionnelles avec les intérêts des divers intervenants. Le personnel du bureau principal a aidé le personnel régional à travailler avec les intervenants de la pêcherie de Dauphin Lake, à négocier une entente et un plan de cogestion concernant la pêche du doré jaune, et à poursuivre l'élaboration d'un mode de gestion de la pêche avec la Première nation de Sagkeeng. On a également formé un groupe de travail conjoint avec les responsables du programme de développement économique régional d'Affaires indiennes et Nord Canada, afin de discuter des questions de pêche d'intérêt mutuel et d'en assurer la coordination.

- La Direction a créé un site Web sur le développement durable afin d'intégrer les concepts de développement durable dans le nouveau programme d'étude cadre en sciences (maternelle à secondaire IV) faisant état des résultats d'apprentissage. Ce site Web est le premier au Manitoba à intégrer des renseignements sur la pêche au programme d'études en sciences au moyen d'Internet. On a fait connaître le site lors d'ateliers et de conférences réunissant des enseignants, comme l'atelier sur les sciences du Special Area Group. La préparation d'exercices pour les élèves de secondaire III et IV se poursuivra avec les enseignants, afin que tout soit prêt à l'automne 2004.

- Le Urban Angling Partnership de Winnipeg, en collaboration avec le City Cats Guiding Service, a donné l'occasion à des résidents de Winnipeg de participer à un tournoi de pêche annuel qui a lieu à l'automne.

- La ligue de pêche sportive, qui s'adresse aux jeunes de 9 à 15 ans, en est à sa quatrième année. Ainsi, 18 équipes regroupant six à huit enfants et deux entraîneurs, sont allées à la pêche une fois par semaine pendant six semaines. Les équipes recevaient des points en fonction de la longueur des poissons pêchés, ce qui permettait de déterminer l'équipe gagnante. Les résultats étaient affichés sur un site Web (www.mwf.mb.ca/League) pour que les participants puissent suivre leur progression dans la ligue. Les partenaires de ce projet sont les suivants : Manitoba Wildlife Federation, Mid-Canada Marine Dealers Association, Pure Fishing (Berkley Canada) et Recreation Connections. Le programme prendra plus d'ampleur en 2004 sous la direction de la Manitoba Wildlife Federation.

Gestion de l'eau

- La Stratégie manitobaine de gestion de l'eau a été rendue publique en avril 2003. La Stratégie fait état des initiatives et des mesures à prendre pour s'occuper des questions de l'heure concernant la qualité, la conservation, l'utilisation et l'attribution de l'eau, l'approvisionnement en eau, les inondations et le drainage.
- Le projet de production et de transport d'hydroélectricité du lac Wuskwatim a fait l'objet d'audiences publiques.
- On a annoncé le nom des membres du Conseil de gestion du lac Winnipeg, dans le cadre du Plan d'action de protection du lac Winnipeg.

- Le processus d'attribution de licences environnementales en vue de l'élargissement du canal de dérivation de la rivière Rouge se poursuit en vertu de la *Loi sur l'environnement* du Manitoba et de la *Loi canadienne sur l'évaluation environnementale.*
- Le nombre de districts de conservation est passé de 9 à 16.
- La Commission de protection de l'environnement a terminé la rédaction de son rapport final sur les réseaux d'assainissement des eaux usées de la Ville de Winnipeg.
- On a créé le nouveau ministère de la Gestion des ressources hydriques, qui est responsable de la gestion de l'eau, du développement économique et des projets d'assainissement de l'eau.
- Un nouveau projet de loi sur la protection de l'eau a été rédigé et présenté en première lecture à l'Assemblée législative. Ce projet de loi propose les modifications législatives jugées prioritaires recommandées dans la Stratégie manitobaine de gestion de l'eau.
- On a proposé une loi régissant l'organisme responsable du canal de dérivation. Ce texte législatif établira un organisme distinct et indépendant qui serait responsable de l'élargissement du canal de dérivation de la rivière Rouge au nom des résidents du Manitoba. L'organisme posséderait les biens matériels associés au canal de dérivation et serait responsable de son élargissement et de son entretien. Cependant, Gestion des ressources hydriques Manitoba continuerait d'exercer le pouvoir décisionnel sur le plan opérationnel.
- La Province et le gouvernement du Canada ont signé une entente d'une valeur de 240 millions de dollars relativement à l'élargissement du canal de dérivation de la rivière Rouge.
- Le Manitoba a élevé une contestation judiciaire en interjetant appel à l'encontre du projet de déviation du Devils Lake au Dakota du Nord.
- Les préoccupations au sujet de la qualité de l'eau du lac Winnipeg ont mené à l'affichage d'avis concernant deux plages, en raison de la présence accrue de la bactérie E. coli due à des algues toxiques.
- La construction de la digue circulaire se poursuit.

Service de l'eau potable

- La *Loi sur la qualité de l'eau potable* est entrée en vigueur et deux règlements ont été rédigés.
- Les travaux menant à la création du nouveau Service de l'eau potable se poursuivent.
- On a créé un site Web public.

Société protectrice du patrimoine écologique du Manitoba

- Un fonds destiné à l'amélioration de l'habitat a été accordé au Programme de protection de l'habitat essentiel de la faune afin de soutenir les projets de gestion des ressources hydriques, l'inventaire des ressources, l'aménagement des terres et les projets d'extension.

Commission des services d'approvisionnement en eau du Manitoba

- Responsable du programme d'amélioration de l'infrastructure de l'aqueduc et des égouts, qui fournit une aide financière et technique aux municipalités désireuses d'améliorer leur réseau d'aqueduc et d'égout.
- Responsable des programmes des districts de conservation : gestion de l'eau, conservation du sol, stockage de l'eau, habitat faunique, ressources historiques et loisirs, éducation publique et une foule d'autres programmes qui valorisent la gestion durable des ressources.

Administration and Finance

Provides executive management of programs and management services, including financial, human resource, computer, and administrative support.

Minister's Salary

The Minister's salary provides the Minister with additional compensation to which an individual appointed to Executive Council is entitled.

Table AF.1

12.1(a) Minister's Salary

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE	Estimate 2003/04 $	Variance Over/(Under)	Expl. No.
Total Salaries and Employee Benefits	10.8	1.00	9.4	1.4	

Executive Support

This area comprises support staff in the offices of the Minister and Deputy Minister of Manitoba Water Stewardship.

The purpose of Executive Support is to develop, implement and oversee policies and programs which are designed to attain, over the long term, the goals set out in the department's role and mission statement, advise the Minister on matters relating to the department, provide policy direction for departmental programs, co-ordinate departmental communications activities and initiatives, and provide administrative support for the offices of the Minister and Deputy Minister.

Table AF.2

12.1(b) Executive Support

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE	Estimate 2003/04 $	Variance Over/(Under)	Expl. No.
Total Salaries and Employee Benefits	153.6	2.00	158.1	(4.5)	
Total Other Expenditures	27.8		27.8	0.0	

Financial Services

The branch provides financial services to the Executive, program managers and operational staff in the newly created Manitoba Water Stewardship, as well as Manitoba Conservation. The branch co-ordinated departmental implementation of financial, procurement and asset management components of the SAP accounting system.

Table AF.3
12.1(d) Financial Services

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	135.6	3.00	131.6	4.0	
Total Other Expenditures	12.0		12.0	0.0	

Information Technology Services

The Branch provides internal information technology service and expertise, including systems analysis, design, implementation, corporate database management, and development and management of a yearly department-wide information technology systems plan.

Major activities

- Work commenced on the development of a new software module within the Environmental Management System (EMS) to manage the needs of the Office of Drinking Water. This new module will facilitate water quality recording by location, lab testing results management, and recording of public and private water supply providers. The EMS system will also be migrated to the latest software version to offer web based deployment to staff users throughout the Province. Once completed, there will also be a public interface capability to provide certain water quality information data sets to the general public through a web based interface.
- Work continued on the development of a new software application to support commercial fisheries management in the Interlake Regional office.
- The ITS Branch continued its work on the migration of many application and data base servers to up-graded architectures of software and hardware.
- The ITS Branch completed a project to refresh 350 desktop/laptop computers within the Conservation and water Stewardship departments. This included the testing and certification of over 350 software applications of which over 40 were custom packaged for multiple user distribution.
- The ITS Branch is working with the Licensing Section and Energy, Science, and Technology in the development of an e-commerce solution to provide web based sales of various licence and permit offerings over the internet for the general public.

Table AF.4
12.1(f) Information Technology Services

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	277.2	4.00	281.7	(4.5)	
Total Other Expenditures	16.0		16.0	0.0	

Regional Water Operations

Northwest

Land drainage continues to be a concern. Pumping operations to remove excess surface water in the Pasquia Land Project consisted of 857 hours of pumping to remove excess surface water. Discussions continued on the completion of the Polder 3 project, a new pump house was constructed on Drain O and flood protection in the Rall's Island area was upgraded. The pump from the Mile 14 pumphouse was rebuilt and repaired. Various surveys were undertaken for the RM of Kelsey to resolve drainage and land owner issues.

Mechanical weed control was carried out on 535 acres of provincial drains, dikes and right-of-ways. Maintenance consisting of clean out and re-sloping was carried out on 6 miles of provincial drains. New culverts were installed through PR 283 at Z Drain, in co-operation with Manitoba Transportation and Government Services.

This year, 2 water rights licenses, 1 license to construct drainage works and 1 application to install culverts were reviewed and issued.

Table RO.1
12.3(b) Northwest Region

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	147.9	3.00	161.0	(13.1)	
Total Other Expenditures	21.0		21.0	0.0	

Northeast

Monitored compliance with and, as required, enforced legislation to ensure the safety of public drinking water systems. The region's Drinking Water Officer inspected public water systems at Nelson House, Cross Lake, Norway House, Wabowden, Thicket Portage, Pikwitonei, Brochet, Island Lake, Red Sucker Lake, Gods Lake Narrow, Gillam, Lynn Lake and Thompson. Annual water audits for drinking water facilities were sent to the local councils at Norway House, Wabowden, Thicket Portage, Pikwitonei, Ilford, Brochet, South Indian Lake, Gods Lake Narrows, Churchill and Thompson. The Drinking Water Officer also worked with the regional Medical Officer of Health and Manitoba Aboriginal and Northern Affairs on specific issues related to ensuring the provision of safe drinking water.

Table RO.2
12.3(c) Northeast Region

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	167.7	3.00	145.1	22.6	
Total Other Expenditures	30.6		30.6	0.0	

Interlake

One hundred and twenty eight water rights licence applications received and 31 drainage concerns or complaints were investigated. There were 80 water rights licences issued, as were 4 letters of approval for drain clean outs. Municipalities were assisted with water management projects. Monthly meetings were held with 5 water management associations (Fisher, Western Interlake, Northeast Interlake, Southeast Interlake and Northwest Interlake) to discuss drainage concerns, licensing and proposed projects.

Provincial waterways (drains) were maintained and crossings repaired or replaced by staff or tendered contract. Dams were operated to regulate water levels within the desirable range. Control structures were operated on Fish Lake Drain, Swan Lake Drain, St. Laurent Dam and Fairford River Dam. Meetings were held with Peguis First Nation to discuss options to alleviate flooding on the reserve and a brushing program was initiated on the Fisher River.

Table RO.3
12.3(d) Interlake Region

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	506.6	11.19	478.5	28.1	
Total Other Expenditures	145.5		145.5	0.0	

Red River and Eastern

Within both regions, provincial waterways were maintained and crossings repaired or replaced by staff or tendered contract. Dams were operated to regulate water levels within the desired range.

The 2003 phase of reconstruction of the South Buffalo Drain was completed at a cost of $800,000. Numerous waterway crossings were replaced at a cost of $400,000.

Numerous drainage complaints were dealt with and 150 drainage licence applications were processed.

Table RO.4
12.3(e) Eastern Region

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	95.3	2.00	107.5	(12.2)	
Total Other Expenditures	21.0		21.0	0.0	

Table RO.5
12.3(g) Red River Region

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	1,357.3	21.44	1,290.6	66.7	
Other Expenditures	285.2		349.9	(64.7)	

Western

Engineering staff completed normal maintenance on 405 miles of provincial waterways and maintained and operated 34 provincial dams, while assisting with regional water rights issues. Fisheries and Oceans Canada required substantial documentation prior to approval of maintenance works on waterways, causing significant delays. Engineering staff also provided technical support in the design of water supply systems for Assessippi and Stephenfield Parks.

Staff continued to undertake investigations, enforcement and licensing of drainage under *The Water Rights Act*. Staff continued to work with Whitemud Watershed Conservation District, following a successful drainage licensing pilot project.

Between April 2003 and March 2004:

- 141 drainage license applications were received, of which 31 were in Whitemud Watershed Conservation District (WWCD).
- 92 licenses were issued, of which 22 were issued in WWCD.

- Regional staff continued to action 146 drainage license applications, of which 73 were received in this fiscal year. Of these outstanding applications, 24 are within WWCD.
- 25 drainage complaints were received. Investigation of an additional 93 complaints from prior fiscal years are ongoing.
- 2 enforcement notices, 1 emergency ministerial order and 1 charge were issued.

Staff participated in watershed management and planning with other agencies and local stakeholders. Current watershed initiatives are ongoing in Swan Lake Basin, Oak Lake Aquifer, Turtle Mountain Conservation District, Whitemud River/Lake Irwin, Valley River, Garland River, North Duck River, Three Creeks Watershed, Little Souris River, Broughton's Creek and Assiniboine Delta Aquifer. Presentations were delivered at two Fisheries and Oceans Canada workshops in Dauphin and Brandon.

Table RO.6

12.3(f) Western Region

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	814.4	16.86	914.8	(100.4)	
Total Other Expenditures	195.7		195.7	0.0	

Office of Drinking Water

The Drinking Water Safety Act was proclaimed on January 30th 2004. Two regulations have been drafted under it and will be circulated for consultation prior to being enacted. The act, and its' regulations, focus on monitoring of water quality, preventing contamination, and identifying potential risks and appropriate water-quality improvements. The act, and its' regulations, will provide the Office of Drinking Water and Manitoba Health Officers with a new mandate and responsibility for drinking water quality.

Work is proceeding on the development of the new Office of Drinking Water Unit. The office was established to enhance existing drinking water programs and related measures already in place, to better protect public health. The 12 Drinking Water Officer positions have been filled, with ten assigned to Conservation's six regions and two in the Central Office. One vacant engineering position for the Central Office has also been filled.

Training of the Drinking Water Officers and other staff is proceeding. The initial inspection activities are being carried out in the field, focussing on the bacterial safety of drinking water supplies. Components of training sessions to date include:

- employee orientation, use of field testing equipment, GPS units and programs, sampling protocols and inspection of public water systems.
- application of the EMS database system used by Manitoba Conservation.
- enforcement training.
- Drinking Water Officers attending the Western Canada Water and Wastewater Association Conference held in Winnipeg. This event afforded the Drinking Water Officers the opportunity to attend papers on water issues, attend a trade show and meet product suppliers and gain additional information on technologies used in the industry and, meet designers of the infrastructure. Two additional days of in-house training were provided with a focus on the new legislation.
- Drinking Water Officers attended a cross-connection control course at Red River College. Cross connections are frequently the source of contaminants entering the distribution system. Red River College has developed a course for training municipal staff. A course was developed by the college to benefit the regulatory requirements of the Drinking Water Officers.
- Drinking Water Officers attended the Manitoba Water and Waste Seminar that is actively supported by Manitoba. Subsequent to this event, staff attended a training session to review all of the training activities covered to date by the Drinking Water Officers. The purpose of this session was to answer questions that have come to light and to identify those weak areas requiring additional training.

Summary of the activities of the Office of Drinking Water in 2003/04:

- The inspection of 400 drinking water systems, for regulation compliance, inventory updates, technical assistance and approval purposes.
- A complete chemical analysis undertaken at 140 facilities.
- Annual audits (regulatory report cards) prepared for each public water supply (385), outlining performance with regard to meeting regulatory requirements.
- The review of 52 water and sewer project proposals forwarded for approval under *The Public Health Act*.
- Processing of 43 projects for issuance of a Certificate of Approval, pursuant to *The Public Health Act.*
- Review of 18 *Environment Act* proposals and 9 *Environment Act* licences.
- Review of technical information or engineering reports and the provision of technical advice related to 40 other projects/issues for purposes other than regulatory.
- Review of information and issuance of "no objection to use" letters for one water treatment chemical and 23 water treatment components.

- Response to 6,450 phone calls from water system owners and operators, consultants, water treatment equipment suppliers, other departments and the public.
- Staff attended 269 meetings related to the regulation, design, operation, and monitoring of drinking water systems and the implementation and administration of the program.
- Delivery of 40 presentations or lectures at operator training courses, technical conferences, public and intergovernmental meetings.
- Training included courses on cross connection control, pathogen control, water treatment, UV disinfection, as well as internal EMS and enforcement training.
- Development of a public website for the Office of Drinking Water.
- Initial planning and business rule development for implementation of the Drinking Water Module of EMS.

Table DW.1
Office of Drinking Water Activities

	2002/03	2003/04
Number of water systems inspected	75	400
Number of comprehensive chemical analyses		140
Number of annual audits		385
Review of PHA submissions	40	52
Number of PHA certificates processed	21	43
Review of EA proposals		18
Review of EA licences		8
Other engineering/technical reviews		64
Number of Phone calls received	2,250	6,650
Number of meetings attended		269
Number of presentations or lectures delivered		40

Table DW.2
Provincial Subsidized Bacteriological Program

Samples Submitted	2002/03	% positive for total Coliforms	% positive for E-Coli	2003/04	% positive for total Coliforms	% positive for E-Coli
Private Supplies	5,936	34%	4%	5,073	32%	3.90%
Semi-Public	1,944	26%	3.70%	2,442	26%	2.70%
Flood Sampling	1,703	46%	8.90%	Emergency Program not required in 2003		

Table DW.3
12.3(j) Office of Drinking Water

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	891.3	18.00	811.0	80.3	
Other Expenditures	381.5		975.2	(593.7)	

Water Management

Water resources continue to be managed to provide present and future generations with a healthy environment and an abundance of diverse natural resources. Water resource management is achieved though ensuring the sustainability of water resources, protecting the integrity of the environment and conserving bio-diversity, minimizing the effects of natural disasters; while optimizing opportunities for sustainable economic benefits and recreation.

Administration

Staff ensures sustainable development, allocation and conservation of water resources by adhering to policy and procedures, controlling funding, negotiating and administering contracts and monitoring efficiency and effectiveness of expenditures.

Table WM.1
12.4(b)1 Administration

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE	Estimate 2003/04 $	Variance Over/(Under)	Expl. No.
Total Salaries and Employee Benefits	461.4	10.25	314.5	146.9	
Other Expenditures	1,742.3		1,714.7	27.6	
Grant Assistance	16.0		25.0	(9.0)	
Total Other Expenditures	1,758.3		1,739.7	18.6	

Water Licensing

The core task of the Water Licensing Section is to safely allocate water for beneficial use. Sustainable allocation of the resource has always been a key mandate of the section. Water budgets have been established for major water courses and several of the major aquifers. Local area impact assessments are done for all groundwater sourced projects. A hydrological yield analyses is done for all surface projects for watercourses where water budgets are not available. Due to these administrative measures, some 74 groundwater applications (irrigation projects) are on permanent hold on the Assiniboine Delta Aquifer (ADA), as these projects are located within ADA sub-basins that have their sustainable yields fully allocated.

The section continued to close files on inactive projects. Licensing staff contacted persons listed on the applications to determine if the projects were ever built and, if so, the current status of the project. In many cases, site inspections were not required and files were closed through the issuance of a letter. The closure of inactive files has helped to put the scope of the licensing backlog into perspective.

The section's participation in the Wuskwatim Clean Environment Commission (CEC) hearings and aboriginal consultations has represented a major commitment of resources over much of the past year.

Table WM.2

Water Use Regulation

Applications received for licences	Surface Water	Groundwater
Applications for renewal of licence	5	16
Applications for new licence	25	55
Total applications received	30	71

Licences issued by type	Surface Water	Groundwater
Domestic	0	0
Municipal	5	3
Agricultural	4	5
Industrial (including mining)	1	3
Irrigation	27	12
Other purposes	0	2
Total licences issued	37	25

Other licensing activities completed	Surface Water	Groundwater
Application (project) assessment completed	72	78
Development/exploration permit issued	2	8
Authorization for temporary water use issued	5	0
Licences/applications reviewed and file closed	22	40
Total other licensing activities completed	101	126

Telephone inquires concerning program activities	Surface Water	Groundwater
Telephone inquiries concerning program activities	1800	1400

Water Use Revenue	
Licence (application) fees	$5,050.00
Industrial water use charges	$106,395.52
Total	$114,445.52

Water Power Regulation and Crown Land Development Review

Recommendations were provided regarding 70 proposals for use and development of 150 parcels of Crown land within Water Power Licence Areas and Water Power Reserve Areas.

Table WM.3
Water Power Revenue

Utility	Land Rentals	Water Power Rentals	Megawatt-Hours Production
Manitoba Hydro	$727,698.62	$64,480,336.68	18,485,041

Table WM.4
12.4(b)2 Water Licensing

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE		Variance Over/(Under)	Expl. No.
Total Salaries and Employee Benefits	837.9	17.00	794.7	43.2	
Total Other Expenditures	36.8		36.8	0.0	

Water Planning and Development

The Water Planning and Development Section conducts stakeholder-based basin, watershed and aquifer management planning; reviews legislation, policies, programs, strategies and directives and carries out water impact reviews.

Water Planning and Communication

Planning and communication services ensured that developments were sustainable, resource and stakeholder interests were protected and impacts minimized. The general public and clients were informed about issues, programs, activities, developments and proposals. The branch's website was used extensively to provide information to clients.

Investigations were undertaken, reports prepared and presentations made to enhance awareness and to respond to concerns. Stakeholder-based basin, watershed and aquifer management planning continued.

Upper Assiniboine River Basin Study

A response was formulated to this report's recommendations and forwarded.

Pembina River Basin Management Plan

Work continued on a three year, water-quality monitoring project to facilitate future decisions on basin projects and spending.

Winkler Aquifer Management Plan

Planning and administrative assistance was provided to the Winkler Aquifer Management Advisory Board, to facilitate implementation by its five action groups.

Oak Lake Aquifer Management Plan

Planning and administrative assistance was provided to the Oak Lake Aquifer Management Advisory Board to facilitate implementation by its four action groups.

Swan Lake Basin Management Plan

Work resumed on this project after a six-month round table operational suspension due to the BSE crisis. Open houses and public meetings were completed on a draft water management plan for the Manitoba and Saskatchewan portions of the basin. Work continued to incorporate public input into a final plan.

Assiniboine Delta Aquifer Management Plan

A draft water management plan was completed for this aquifer. An agreement was reached to hold open houses and public meetings in the fall of 2004 to obtain input towards finalizing the plan.

Stephenfield Lake Watershed Management Plan

A stakeholder based planning process was initiated for this watershed. A 21 person Technical Advisory Group and a 28 agency Round Table were established and a background report on the watershed's resources was completed and presented.

Tri-Lakes

The branch is providing technical support to the Tri-Lakes (Pelican, Rock and Swan Lake) Development Corporation, for water projects to enhance recreational opportunities on Rock Lake and Swan Lake.

Legislation and Policy

To ensure sustainable development of water resources, legislation, regulations, policies and programs were reviewed.

The Water Protection Act, was drafted to set new standards and targets for water quality.

The Drinking Water Safety Act was proclaimed, establishing drinking water quality standards that must be met by public and semi-public water systems.

The Red River Floodway Act was proposed in March 2004. This act will provide a legislated right to compensation for Manitobans who experience loss or damage from artificial flooding caused by Red River Floodway operation during a spring flood.

In addition, *The Floodway Authority Act* was proposed. This legislation will establish a separate, independent and accountable authority to complete the expansion of the Red River Floodway on behalf of Manitoba residents. The Red River Floodway Authority would own the floodway's physical assets and be responsible for its expansion and maintenance however, the operational authority would remain with Manitoba Water Stewardship.

The Manitoba Water Strategy

The Manitoba Water Strategy was released April 2003. The strategy identifies the initiatives and actions to be undertaken to address immediate issues in the policy areas of water conservation, water quality, use and allocation, water supply, flooding and drainage. Three discussion papers for consideration by the Water Strategy Steering Committee on the three implementation elements conceptually described in The Manitoba Water Strategy: Legislation, An Integrated Water Planning and Management System and Financing Mechanisms, were completed. Public workshops were held in seven communities in Northern Manitoba. Information sharing sessions on the Strategy were organized and held with five First Nations political organizations.

Water Control Infrastructure

Waterways, crossings, water control structures, dams, dikes, drainage channels and major flood control works are managed and monitored. Inspection and assessment services are provided to maintain safety and function and to identify refurbishment and upgrading requirements. Proposals that could affect the infrastructures' integrity are investigated and authorization permits outlining terms for continued safe and effective control are issued.

Twenty-one applications were received for construction of small dams. Twenty-one licences were issued with 8 backlog applications remaining.

Drainage and Litigation

Land drainage licensing includes investigation, compliance, enforcement and resolution of complaints. Contracts for upgrading and rehabilitating agricultural drainage systems were co-ordinated and supervised.

Water Diversion Works Regulation

Technical advice was provided to license applicants in order to protect the public interest and affected people or resources, particularly in respect of works that crossed or affected adjacent properties where capacity of the owner, usually the municipality, was required.

In evaluating drainage project applications, consideration was given to impacts on water resources, wildlife, fisheries, agricultural land base, public and private property, receiving drainage works, and natural waterways and water bodies. Four hundred and fifteen applications for drainage licences were received, 4 Ministerial Orders were prepared and 298 drainage licences issued.

Data Management

A database of provincially owned infrastructure detail including maps, plans, field/survey information, and microfiches is maintained. Requests for loans or reproduction were filled and specialized equipment and supplies maintained.

Water Projects

Assiniboine River Dikes Rehabilitation

Refurbishment was completed at one site.

Red River Floodway Rehabilitation

Resurfacing of the hydraulic cylinder rods on the Red River Floodway structure was initiated.

Table WM.5

Development Review of Water Impacts

Water Impact Reviews	1999-00	2000-01	2001-02	2002-03	2003-04
Proposals for subdivisions, municipal development plans and zoning by-laws	515	560	542	540	485
Designated Flood Area Permits	239	180	150	116	45
IDG circulars, including *Environment Act* proposals and Sustainable Development Innovation Fund applications	52	120	125	120	115
Crown land sales, and Lease and Permit applications	268	240	175	170	210

Table WM.6

12.4(b)3 Water Planning and Development

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE	Estimate 2003/04 $	Variance Over/(Under)	Expl. No.
Total Salaries and Employee Benefits	1,073.9	18.00	1,155.8	(81.9)	
Total Other Expenditures	72.9		80.7	(7.8)	

Surface Water Management

Level and streamflow forecasts and status reports on hydrologic conditions of rivers, lakes and reservoirs, were provided, with emphasis on operation of control works and flood protection. Planning and engineering studies were undertaken for water use, allocation and licensing, public information, and multi-disciplinary resource management. Operation of dams was co-ordinated for water supply, conservation, flood control, fish and wildlife habitat, and recreation. Specialized hydrologic analysis, advice and information were provided.

Hydrologic Forecasting and Reporting

Spring runoff was quite low in most areas in 2003. However, daily river information sheets and forecasts were prepared only for the Assiniboine River during the month of April when some flooding occurred from Miniota to Virden and from Baie St. Paul to Lido Plage. Complaints that operation of Shellmouth Reservoir had contributed to spring flooding in the Virden area were examined by modeling different operation scenarios. The results, which showed that the flooding was due to natural causes, were submitted to senior departmental management and were presented to the Shellmouth Reservoir Operation Liaison Committee.

Due to the relatively dry conditions and low water levels during most of 2003, long-range forecasts for rivers, lakes and reservoirs were prepared to determine whether serious water supply problems would

develop. The information was communicated to water managers and operators within and outside government. Additionally, special briefings were done for various government ministers, deputy ministers and directors.

Water Supply Condition Reports were prepared in June, August, November and January showing conditions and forecasts for rivers, lakes, reservoirs, aquifers and on-farm water supplies. These reports were widely distributed via mail, fax and e-mail and were posted on the Water Branch website. Additional lake reports and forecasts were prepared in July, August and September.

Weekly reports on river flows, including tables, graphs and a narrative were prepared and widely distributed throughout the year.

A total of 31 storm precipitation maps, as well as monthly maps and seasonal totals and percent of normal, were prepared and distributed within the department, to Manitoba Hydro and to others, via the Water Branch website.

Special forecasts for operation of controlled lake and reservoirs were prepared throughout the year. The Shellmouth Reservoir Operation Liaison Committee was briefed on watershed conditions, forecasts and recommended operation scenarios 8 times by e-mail, twice by conference call and once by a meeting. Special forecasts were prepared to facilitate operation of the Fairford Dam at the outlet of Lake Manitoba and several inter-agency meetings were held to discuss operation strategies and possible dredging of the channel from Lake Manitoba to the dam. Additional forecasts were prepared for the Pelican Lake Operation Advisory Committee and to support regional staff in the operation of Dauphin Lake. Inflow forecasts were prepared for some reservoirs, which were in danger of running out of water during the winter, such as Vermilion, Irwin and Deloraine Reservoirs. Advice was provided to regional staff regarding operation of Stephenfield Reservoir, River Reservoir and dams in Manitoba's Whiteshell. Information on operation of dams in Saskatchewan and their effects on Manitoba waterways were provided to regional staff and to a local committee on Pipestone Creek. Special reports and forecasts were also prepared to facilitate operation of major flood control works such as the Red River Floodway and the Portage Diversion.

Liaison was conducted with outside agencies such as the Saskatchewan Water Authority, U.S. National Weather Service, U.S. Fish and Wildlife Service, U.S. Geological Survey, Manitoba Water Services Board, Environment Canada and other agencies to exchange information on water conditions, weather and river forecasts. Special liaison was conducted with the City of Winnipeg, City of Brandon and Manitoba Hydro to provide data and hydrologic forecasts and to obtain information on their needs.

Manitoba's Hydrologic Forecast Centre kept a close watch on weather and water conditions and provided special information on the risk of heavy storms over the City of Winnipeg. This work was done to assess the need for Floodway operation to protect the city from basement flooding when river levels were high. Also, a flash flood watch was issued for southeastern Manitoba prior to a record rainstorm in late March 2004. Widespread flooding resulted from this storm, with many municipalities declaring a state of emergency.

The Forecast Centre engaged in other necessary activities, such as, planning and coordinating conventional and airborne snow surveys, coordinating forecast dates with senior managers and outside agencies, preparing special reports on hydrologic conditions and forecasts for senior management and departmental executives, preparing news releases, conducting media interviews, and briefing the Inter-Agency Emergency Preparedness Committee.

Developmental work on hydrologic forecasting procedures continued with updating of stage-discharge curves and improvement of runoff forecasting procedures.

Planning of data networks in support of hydrologic operations and forecasting continued, with acquisition of 50 rain gauges to supplement cutbacks in the federal network. The potential benefits of an electronic real-time meteorological network to water management were identified in the hope of reviving the ACE climate network. Collection of hydrometeorological data in Sturgeon Creek watershed, in support of modeling studies, continued with some help from Red River College.

Manitoba Water Stewardship continued to provide support to Manitoba's Climate Change Branch, by provision of technical expertise on climate change, review of technical applications for funding and by participation on an inter-agency committee on climate change.

Hydrologic and Hydrometeorological Analysis

Design hydrographs for the Red River at the Floodway Inlet and the City of Winnipeg were prepared for the 500-year, 700 year and 1000 year floods to facilitate planning for the expanded Red River Floodway. A probable-maximum-flood hydrograph was prepared for the Red River at the Floodway Inlet to help consultants evaluate the potential for failure of the structure and associated dikes.

Design flows for highway crossings and waterways were computed for departmental regional offices, Manitoba Transportation and Government Services, consultants, and municipalities. Water availability analyses were performed and instream flow requirements were determined for several small site-specific locations for inclusion in Water Rights Licenses. Historic water level and streamflow information was provided, as well as, water quality design flows. Hydrologic impact assessment studies were undertaken and the methodology for computing fish passage flows (3-day flows) for waterway openings were applied.

Continued hydrologic support was provided to the Assiniboine River Instream Flow Working Group. Daily flows were simulated and analyzed for the Assiniboine River, covering the years 1993 to 2000, for various draft instream flow recommendations developed for Brandon. Their impact on the Assiniboine River's firm water supply, flooding below Shellmouth Dam and Lake of the Prairies water supply was assessed.

A new procedure (IFN-DFR) was developed to assess the amount of water available for allocation to human use after accounting for instream flow needs on small intermittent streams. The IFN-DFR method replaces the existing methodology, which had been developed a number of years ago for the Agassiz Irrigation Area. The revised method provides more representative instream flow values for locations of the province outside of the Agassiz area. This new procedure was used to determine the allocable spring volumes on the Boyne River below Stephenfield Dam. A database is being developed for all streams where recorded daily spring flows are available.

A Water Balance Allocation Model was developed for the Tobacco Creek Watershed.

A paper entitled "Inter-Relationship of the Assiniboine Delta Aquifer and the Assiniboine River" was presented and published at the 56TH Canadian Geotechnical Conference, 2003 in Winnipeg.

An analysis of allocable spring volumes (March to May) on intermittent streams in the southwest for the 80% and 70% risk levels was presented to the Southwest Manitoba Water Development Team.

Hydrologic support to other activities of the branch/department included:

- Manitoba Drain Maintenance Guidelines Committee;
- presentations to the ADA Round Table on the topic of surface water and ADA interaction;
- presentation to the Stephenfield Lake Watershed Management Plan Round Table on the watershed's waters resources;
- presentation on Manitoba hydrologic processes to Manitoba Phosphorus Expert Committee;
- examining various localized flooding problems/concerns (e.g. Smart backflood);
- analyzing the impact of ADA water Allocation on Lake Irwin;

- reviewing Stephenfield Lake water supply with the recommendation to re-survey the Lake to determine lost storage due to sedimentation; and
- updating the Assiniboine River water supply budget.

Surface Water Data Collection

The Surface Water Management Branch relies on water level and streamflow data collected under the Canada-Manitoba Hydrometric Agreement for operating water control works, flood forecasting, water management investigations and hydrologic studies. Environment Canada and Manitoba Hydro operated 143 discharge and 62 water-level gauging stations under the agreement. Real-time hourly data was retrieved at 190 sites in Manitoba and adjacent provinces and states.

To supplement the federal-provincial network, levels were monitored at 137 gauging sites. At two sites, daily streamflow data was obtained during the open water period. At four sites digital water level recorders were installed. The number of federally and provincially operated hydrometric stations since 1995-96 is shown below.

Table WM.7
Hydrometric Station Operation

	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Federal-Provincial Stations	227	227	174	179	179	188	196	206	205
Provincial Stations	123	123	135	129	126	117	110	135	137

Data for 72 provincial stations was forwarded to Environment Canada's database. Provincial and federal data were added to the provincial database.

Water Supply Management, Structure Operation and Allocation Planning

Reservoir levels and spring inflows were monitored to assess flooding and potential supply problems. Inspections were conducted at dams and reservoirs to evaluate performance and concerns were investigated. Stakeholder supported operating plans and plans for supply for municipal and industrial uses were carried out. Surface water supplies were sustainably managed through regional or provincial plans, strategies and policies. Municipal use data was obtained and usage at about 100 communities was updated.

The Lake Manitoba Regulation Review Committee continued its work to determine the most acceptable range of regulation for Lake Manitoba and also to consider the best course of action for the water regime along the Fairford River, Lake Pineimuta, Lake St. Martin and the Dauphin River. The committee released its final report for public distribution in January 2004 and copies were made available at offices of all rural municipalities around Lake Manitoba. A second round of five, open house, public meetings were held around the lake in February 2004. The intent was to present the committee's findings and recommendations and to obtain comment and feedback from stakeholders, in light of prevailing record low water levels on Lake Manitoba. The committee is expected to complete its summary report on this public consultation process in June 2004.

Work continued on the Canada-Manitoba Shellmouth Dam Consolidation Agreement, which will examine the addition of spillway gates to the Shellmouth Dam on the Assiniboine River near Russell, Manitoba. The spillway gates will provide enhanced water management capability on the reservoir through creation of an additional six feet of water storage capacity and will ensure additional water supply for irrigation

expansion and other development opportunities downstream along the Assiniboine River. Work began on preliminary engineering studies and scoping of environmental issues related to the proposed spillway gates.

Reservoir Regulation

Most major lakes and reservoirs were at unusually low levels in May as a result of a dry autumn in 2002 followed by minimal spring recharge in 2003. Lake of the Prairies peaked at 428.42m about early May and receded to summer target by mid-August. Lake Manitoba peaked at 247.28 in mid-June, dropped below the lower limit of the range of regulation in early July and receded to record low levels in autumn. Dauphin Lake peaked in mid-June at 260.51m, 0.03m below summer target level. Brereton Lake peaked at 316.14m in mid-June, 0.12m above target. Falcon Lake peaked at 325.01m in late September, 0.34m above summer target level. West Hawk Lake peaked at 332.76m in late September, 0.22m above summer target level. Stephenfield Lake and Lake Wahtopanah filled as usual in mid-April.

Flood Damage Reduction

The Red River Floodway and the Portage Diversion have been operated in more than 60% of the years since their completion, but neither structure was operated in the spring of 2003 due to low runoff flows. Technical and oversight inputs were provided to two major studies. The first input was KGS Group's comprehensive examination of the benefits and costs of operating the Floodway in future summers. The study was overseen by a steering committee, comprised of representatives of the federal and provincial governments, the cities of Winnipeg and Selkirk, and the rural municipalities of Ritchot, MacDonald, and Morris. The second input was Acres Consulting Ltd.'s updating of the relationships used to calculate the natural water levels immediately south of the Floodway gates. This study is being overseen by the same steering committee. Technical inputs were provided to KGS Group's examination of the review of the adequacy of the City of Winnipeg's flood control works, as related to the sewer and land drainage system within Winnipeg.

The MIKE-11 hydrodynamic model of Red River valley was used to estimate flows and water levels for a number of large floods. The water level information calculated for these large floods was placed on a website that provides information on a variety of aspects of flooding in the Red River Valley.

Hydraulic analyses were undertaken to assess the impact of relocating a portion of the Designated Floodway Line along the Red River within Winnipeg. These analyses were done in response to two requests, one by the City of Winnipeg and one by a resident who owns property along the Red River.

Terms of reference were developed for a possible flood damage reduction study along the Fisher River and along some of its larger tributaries.

Hydraulic analyses were conducted on the Red River from Emerson to Lake Winnipeg, as part of a "Species At Risk" project initiated by the University of Manitoba, Department of Zoology. The objective was to produce detailed, up-to-date bathymetric data for the Red River, which would be used along with other information to assess the potential for Lake Sturgeon fish habitat.

Table WM.8
12.4(b)4 Surface Water Management

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	788.6	13.00	809.2	(20.6)	
Other Expenditures	225.3		243.5	(18.2)	
Canada-Manitoba Agreement for Water Quantity Surveys	587.0		587.0	0.0	
Total Other Expenditures	812.3		830.5	(18.2)	

Groundwater Management

The Groundwater Management Section's activities enhance our ability to monitor and manage provincial groundwater resources in a sustainable manner. Major activities include administration of *The Ground Water and Water Well Act*; collection and storage of information on occurrence of aquifers, quality of groundwater in them and their sustainable yields; and compilation of this information in the form of maps, reports and raw data. At the same time, the section has become focussed on extensive studies of rural groundwater quality and investigating potential impacts of agricultural activities on groundwater quality.

Aquifer Definition

Staff in the aquifer definition function continued to devote most of their efforts to studies of agricultural impacts on groundwater quality, including participation in the technical review process. These activities are discussed under the Value Added Livestock Initiative section.

A number of activities related to regional groundwater mapping and data compilation were undertaken, many in co-operation with other groups.

Groundwater analyses which included one or more of the trace elements arsenic, barium, boron, fluoride or uranium were compiled and mapped to show the distribution of these trace elements in groundwaters within the province. The maps and accompanying discussion were presented at a national conference. The arsenic data was also provided on request to two university researchers examining the distribution of arsenic in water supplies nationally and to a student at the University of Minneapolis who is studying the geochemistry of arsenic in groundwater in the upper Midwest.

In co-operation with the Geological Survey of Canada (GSC) and a student at the U. of M., groundwater quality information for the Winnipeg Formation Sandstone aquifer in Manitoba has been compiled and mapped. A report on this study should be published in fiscal year 2004/05 as a GSC open file. A study of the salt springs of Manitoba was also undertaken in co-operation with the GSC, utilizing new geochemical and isotopic results from a re-sampling of the springs carried out over the past few years. The results of this study were presented at a national conference in the fall of 2003.

An examination of the impacts of water wells interconnecting the Winnipeg Formation Sandstone Aquifer and the overlying Carbonate Aquifer was also undertaken in fiscal year 2003/04. Possible

impacts from interconnecting wells include local salt-water contamination of the Carbonate Aquifer and a lowering of water levels in the sandstone aquifer which may influence the fresh water-salt water boundary. A paper presenting the results of this study was presented at a national conference in 2003.

Groundwater sampling in southwestern Manitoba was also undertaken in co-operation with the Prairie Farm Rehabilitation Administration (PFRA), as part of a regional groundwater study being conducted in the area. This project should continue in fiscal year 2004/05, with sampling and comprehensive analysis of groundwaters from deeply buried aquifers in the area planned.

Monitoring was also continued in the vicinity of two saline wells in the Ile des Chênes area. The Water Branch had previously sealed off the lower portions of these wells to halt the upward flow of saline groundwater into the overlying Carbonate Aquifer. Quality in nearby wells continued very slow improvement.

Value Added Livestock Initiative

Groundwater Impact Studies

Monitoring has continued at four existing study sites, two on shallow sand aquifers and two in glacial till environments, to examine possible groundwater quality impacts from the use of liquid hog manure as a crop fertilizer. Results from five years of monitoring at one site on shallow sand overlying the Assiniboine Delta Aquifer indicate that the application of manure as a fertilizer at proper agronomic rates has not resulted in significant microbial or inorganic impacts on shallow groundwater quality. However, groundwater quality changes have been observed and have been attributed to general agricultural practices. Analysis of data for the other three sites is currently underway.

Co-operative studies were initiated in 2003 with a number of groups at the U of M on a study site overlying a shallow sand aquifer in southeastern Manitoba. The overall study will examine soil, microbial and water issues related to cattle production on pasture/forage fields fertilized with liquid hog manure. In addition, support has continued toward the completion of Masters theses at the U of M dealing with seepage from earthen manure storages and microbial impacts on shallow sand aquifers from the application of manure as a crop fertilizer.

Monitoring has also continued at the site of large liquid hog manure spill over a shallow sand aquifer near MacGregor.

Results from some of the current and completed studies were presented in a number of papers at the national CGS/IAH Groundwater Specialty Conference in Winnipeg in the fall of 2003. These results were also presented to the general public and regulators in a series of talks over the past year.

Technical Support and Co-operation

Hydrogeological aspects of proposals for new or expanding livestock operations were reviewed and technical expertise provided to the Technical Review Committees for approximately 30 sites. Support was also provided to the review process through discussions with the public, municipal councillors and planners, regarding concerns about livestock expansion and water quality. Staff also provided support for review of the Livestock Manure and Mortalities Management Regulation (42/98) and development of guidelines to minimize the impact of livestock operations on groundwater quality.

Talks and presentations were also given to staff and the public on potential groundwater impacts from hog and cattle operations and the results of various studies.

Co-operation with Other Government Departments and the Public

In addition to the functional activities described above, Groundwater Management staff were actively involved in a number of provincial and national groundwater initiatives and provided daily assistance to the public and other government agencies dealing with a variety of groundwater issues.

Evaluations were provided on a daily basis of the potential for groundwater quality impacts from various developments and the availability and quality of groundwater throughout the province. The drought conditions in 2003 lead to a significant increase in the number of requests for assistance and information from the public on water supply and well construction issues. Staff also reviewed and commented on a large number of reports submitted to the province on groundwater issues, including evaluation of the impacts of groundwater developments and impacts from potential sources of contamination.

Co-operation continued with Manitoba Agriculture, Food and Rural Initiatives, and Agri-Food Canada on the federal Hog Environmental Management Strategy and methods for aquifer sensitivity mapping being considered under this program. Input has been provided to the Geological Survey of Canada and its contractors in developing national programs dealing with groundwater monitoring.

The section was actively involved in supporting the development of aquifer and basin management plans, specifically for the Assiniboine Delta Aquifer and the Swan Lake Basin but also for Stephenfield Lake, Little Souris River, Turtle Mountain and the Upper Assiniboine River watersheds. Technical advice was continued to the Oak Lake Aquifer Management Plan through the Water Quality Protection Planning Group and the Monitoring Committee Action Group.

Technical support on various groundwater-related issues is being provided to the Manitoba Floodway Expansion Authority.

Manitoba Rural Groundwater Quality Initiative

Water Quality Sampling

Water quality sampling was completed in the network of sentinel wells to provide on-going data for the long-term monitoring of water quality in aquifers throughout the province.

Water quality sampling was completed in the Assiniboine Delta and Oak Lake Aquifers to assess the current water quality conditions in shallow observation wells and to continue monitoring the long-term trends of water quality within these aquifers.

Technical Support and Cooperation

Ongoing technical support is being provided to the Office of Drinking Water on water quality and other groundwater related issues. A GIS-based database of municipal water supply wells is also being developed in co-operation with the Office of Drinking Water.

Technical information on the sealing of abandoned wells continues to be provided to the general public, industry and various levels of government.

Sealing Abandoned Water Wells

Technical information on the sealing of abandoned wells continues to be provided to the general public, industry and various levels of government.

Groundwater Development Projects

Reviews were completed for a number of groundwater development (proposed subdivision) projects.

Aquifer and Watershed Management Plans

Technical support was provided in the development of a draft aquifer management plan for the Assiniboine Delta Aquifer and in the inventory of groundwater resource information for the development of watershed management plans for the Little Souris River, Turtle Mountain and Upper Assiniboine River Conservation Districts.

Groundwater Protection Program - Red River Region

A final report describing the work completed as part of the Groundwater Protection Program was prepared. The Groundwater Protection Program is a component of Program Element 4, Environmental Impact Mitigation and Scientific Data, of the Canada-Manitoba Partnership Agreement on the Red River Valley Flood Protection. The program was implemented to help protect potable water supplies from the negative effects of surficial flooding as occurred in the spring of 1997 in the Red River Valley.

Co-operation with Other Government Departments and the Public

Ongoing support is being provided to the Office of Drinking Water on water quality issues. During this fiscal year, technical support was provided for groundwater-related investigations and/or follow-up work for the communities of Eden, Glenboro, Altamont, Birds Hill, Crystal City and Ninette.

A review of the status and condition of the drainage and observation wells installed in 1998, as part of the Lake Audy Drainage Project, was completed for Manitoba Transportation and Government Services.

Technical information is being provided to the Assiniboine Delta Aquifer Round Table as part of the development of an aquifer management plan for the Assiniboine Delta Aquifer.

Technical assistance was provided to the Water Strategy Legislation Task Team in the review of water legislation with regard to *The Ground Water and Water Well Act*.

Table WM.9
12.4(b)5 Groundwater Management

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE	Estimate 2003/04 $	Variance Over/(Under)	Expl. No.
Total Salaries and Employee Benefits	883.4	16.00	980.7	(97.3)	
Total Other Expenditures	342.2		351.2	(9.0)	

Water Quality Management

The Water Quality Management Section assists in the protection and rehabilitation of aquatic ecosystems, through the application of principles of sustainable development and the innovative management of risks by:

- Operating an ambient monitoring network on major streams, lakes and recreational beaches, assisted by volunteers, regional personnel and organizations, such as conservation districts.
- Conducting issue-based, site-specific studies, usually by intensive short-term sampling, to assess point and non-point source impacts from agriculture, mining, forestry, municipal discharges, and others.
- Supporting and participating in scientific studies to better understand impacts of human disturbance on ecosystem structure and function.
- Developing and recommending water quality standards, objectives and guidelines to protect water quality and ecosystem integrity.
- Providing technical and scientific support to the department, various levels of government, Clean Environment Commission and others.
- Co-operating with neighbouring jurisdictions to protect water quality from upstream developments.
- Addressing non-point source pollution in partnership with volunteers, municipalities and others.
- Educating volunteers and citizen groups to foster awareness and empower local stewardship. Activities include presentations and non-technical articles for newsletters.
- Reviewing proposals under *The Environment Act* and *The Dangerous Goods Handling and Transportation Act*, and other technical documents or proposals.
- Leading aquatic ecosystem protection, including participating in local, provincial, regional, national and international committees, to address issues and to develop co-ordinated actions.
- Administering the Canada-Manitoba Water Quality Monitoring Agreement.
- Developing and implementing co-operative, proactive strategies to prevent invasion by zebra mussels and other foreign aquatic species.
- Contributing to sustainability reporting, including operation of ambient monitoring sites in several ecozones, database maintenance and incorporation of community and ecosystem-level monitoring and reporting tools to provide information on sustainability indicators, including the Canadian Council of Ministers of the Environment's Canadian Water Quality Index.
- Managing acquisition of on going, high-quality laboratory analytical services for the department.
- Managing water quality data in a secure, user-friendly system that meets complex, on going needs of the section, department, clients and partners.

Priority Activities in 2003-04

- Completed the third and final year of the Assiniboine River Study. Information generated from this study will assist in ensuring that existing and future development along Assiniboine River occurs in a sustainable manner. This work is being co-ordinated with studies being conducted by the Cities of Brandon and Portage la Prairie.
- Worked with cottage-owner associations, lake and stream stewardship groups, conservation districts, municipalities and other local authorities, to collect water quality information and to develop co-operative, basin-wide approaches to maintaining and rehabilitating water quality.
- Ambient water quality monitoring activities continued at over 50 sites. Up to 100 water quality variables were measured at most sites year round, while bottom invertebrate community was assessed at about 25 sites. Both water chemistry and structure of the invertebrate community assist in determining ecosystem health. Data is requested by external stakeholders and is used by the department, for example, to determine assimilative capacity for discharge licensing under *The Environment Act*.
- Water quality was monitored at over 50 beaches and information was posted on the department's internet website.
- A major study was completed to identify the source of Escherichia coli bacteria at Lake Winnipeg beaches, which led to posting advisory notices at West Grand Beach and Gimli beaches in mid-summer.
- Significant work continued on Manitoba's Nutrient Management Strategy. Arising from the Nutrient Management Strategy was the Lake Winnipeg Action Plan. This plan commits to reducing levels of nitrogen and phosphorus in Lake Winnipeg to those concentrations that existed prior to the 1970s. As

part of the Lake Winnipeg Action Plan was the establishment of the Lake Winnipeg Stewardship Board. The Water Quality Management Section provided considerable support to the board during its inaugural year.

- As over 70% of Manitoba's surface water originates in other jurisdictions, the section plays a major role in ensuring that transboundary water quality is protected and of sufficiently good quality to meet our needs. The section participates on such international committees as the International Joint Commission's International Red River Board, the Prairie Provinces Water Board and others.
- Support is provided to oppose interbasin transfer of water and the threat posed by aquatic nuisance species from proposed Devils Lake outlet and Garrison Diversion Project. Lawsuits continue on one of the Garrison projects and new actions were launched on the Devils Lake outlet project.
- Significant effort was dedicated to programs and co-ordinated efforts to prevent zebra mussel and other nuisance aquatic species from being introduced, including the deployment of student inspectors to border crossings.
- Co-ordinated the department's acquisition of high quality analytical services to support our technical and scientific programs, through the administration of contracts with two laboratories.
- Provided input to the development of *The Water Protection Act*, tabled for first reading in the legislature in early March 2004.
- Input was provided to Clean Environment Commission's public hearings on the City of Winnipeg's wastewater collection and treatment system and to hearings held related to the expansion to a second shift at Maple Leaf Meats Ltd. in Brandon.

Table WM.10

12.4(b)6 Water Quality Management

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE	Estimate 2003/04 $	Variance Over/(Under)	Expl. No.
Total Salaries and Employee Benefits	442.1	7.00	432.0	10.1	
Total Other Expenditures	215.5		219.7	(4.2)	

Waterway Maintenance

Regional engineering and branch staff performed waterway maintenance activities under three categories: water allocation, flood-damage reduction and waterway maintenance, including associated labour costs. Region staff operated dams to control flows as directed by the branch, including maintaining facilities. Flood damage reduction activities mitigated flood damages and maintained structures and equipment to ensure future service. Waterway maintenance activities maintained provincial waterways and crossings, primarily for the benefit of the agricultural sector. Regional engineering staff also performed drainage licensing activities and enforcement under *The Water Rights Act*.

Branch activities, supported by waterway maintenance funding, comprise a broad range of activities, such as spring snow surveys, litigation, special studies for waterway maintenance and other water infrastructure projects, including developing provincial standards and monitoring safety of provincial dams. Issues identified by municipalities are addressed through a contingency fund. Cost of providing engineering data to government agencies, the public and the business sector is also funded under waterway maintenance.

Waterway maintenance funding also supported spring flood fighting costs. In co-operation with Manitoba Intergovernmental Affairs, some additional critical waterway maintenance activities were performed to ensure waterway performance

Table WM.11

12.4(b)7 Waterway Maintenance

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE	Estimate 2003/04 $	Variance Over/(Under)	Expl. No.
Total Other Expenditures	4,180.7		4,000.0	180.7	

Fisheries

Fisheries Branch ensures sustainable development of fisheries resources. Management programs are developed to provide the greatest benefits to Manitobans, by maintaining or enhancing populations and habitat, monitoring harvest and habitat alterations and allocating resources for the best return. The branch directs and reports on programs and budgets, legislation and policy, standards and guidelines and co-ordination and monitoring. The branch also administers the Northern Fishermen's Freight Assistance Program. Head Office and Regional Fisheries Managers report to the Fisheries Director, who is responsible for operational decision-making and program delivery.

An amendment to *The Fisheries Act* was introduced, which will strengthen the department's ability to deal with illegal commercial fishing and support efforts to have a healthy and vibrant commercial fishery. The proposed amendments include:

- increasing the maximum fine level from $10,000 to $100,000, as the commercial value of illegally caught fish often exceeds $10,000;
- making it an offence for a person to remove, damage or interfere with any net or other fishing gear set out by another person;
- empowering Resource Officers to seize evidence and equipment, with or without a warrant, when they discover an offence being committed, supplementing existing seizure powers. This change would be consistent with other legislation such as *The Wildlife Act*, *The Resource Tourism Operators Act* and *The Fisheries Act of Canada*; and
- clarifying authority and allowing Manitoba to better exercise its constitutional authority over allocation of Crown property, by regulating intra provincial movements and transactions involving commercially caught fish. The regulation making authority will allow the province to regulate fish buyers and sellers and license certain components of the commercial fishing industry that take place in Manitoba.

Winnipeg's Urban Angling Partnership, comprising Mid-Canada Marine Dealers Association, Manitoba Wildlife Federation, Fish Futures Inc., The Complete Angler, City of Winnipeg, and the Province of Manitoba, expanded a number of programs. Opportunities provided for residents and visitors to participate in recreational angling included:

- Learn to Fish Clinics,
- Winnipeg Fish Festival,
- Fish Winnipeg Media/Corporate Challenge (monies raised for youth angling programs), and
- Urban Fishing Derby

Working in partnership with Manitoba Wildlife Federation, Mid-Canada Marine Dealers Association, Manitoba Recreation Connections and Berkley Canada, Manitoba's Recreational Fishing League completed another successful year. The league is designed to provide Manitoba youth with an opportunity to enjoy a recreational angling experience and learn about the environment around them.

A sustainable development website was developed to integrate sustainable development concepts into the new Kindergarten- Senior IV Science: Manitoba Curriculum Framework of Outcomes. The site is a Manitoba first in integrating fisheries management information into a science curriculum via the Internet. The site was promoted at teacher workshops and conferences, including the Special Areas Group (Science) Workshop. Work will continue with educators to develop exercises for Grades S III to and Senior IV for implementation in fall 2004.

At Whiteshell Fish Hatchery, the Visitor Centre was operated for the third year. Park interpreters staffed the building and gave tours to over 4,345 people from June through the September long weekend. The centre provides a sheltered area to begin tours, washrooms and drinking water. Interpretative exhibits

include information on species reared at the hatchery, life stages of fish, how water is used, history of the hatchery and ecosystem interaction.

The branch continued to participate in the national Invasive Species, Aquaculture and Recreational Fishing Task Groups and co-chair the national Freshwater Fish Strategy Task Group. These groups, reporting to the Canadian Council of Fisheries and Aquaculture Ministers, are developing co-ordinated action plans that involve stakeholders and maximize management efficiency and effectiveness.

Administration

This section provides annual estimates, financial and personnel services and administrative support.

Table FI.1
12.4(f)1 Administration

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	134.2	2.00	126.8	7.4	
Total Other Expenditures	195.0		196.8	(1.8)	

Fish Culture

Fish stocking programs continue to create new, self sustaining fisheries, maintain and enhance fisheries, where natural reproduction fails or winterkill occurs, and introduce species. Fish are produced at the Whiteshell and Grand Rapids Hatcheries, the latter co-funded by Manitoba Hydro,as well as a seasonal walleye hatchery located at Swan Creek, near Lundar on Lake Manitoba.

In 2003, the Swan Creek Hatchery hatched 49.78 million walleye fry, including 3.0 million eggs that were received from Falcon Creek Spawn Camp at Falcon Lake, Manitoba. 32.8 million fry were distributed to Central Region commercial and sport fishing lakes and Lake Winnipegosis (5.2 million). The sportfishing lakes in the West and Southwestern Regions received 10 million fry. In all, the Swan Creek Hatchery stocked a total of 42 waterbodies. 21.5 million fry that were stocked were marked with Oxytetracycline as part of an effort to determine the effectiveness of the stocking program in Lake Manitoba and other water bodies throughout the province.

The Whiteshell Hatchery stocked walleye fry into 36 sport fishing lakes as well as one rearing pond in the East/Southeast Region. St. Malo Lake in the Red River Region was also stocked with fry from the Whiteshell.

Grand Rapids Hatchery operated a spawn camp at Basket Creek on the north end of Lake Manitoba, producing 200,000 green eggs, one million eyed eggs as well as 13.4 million fry for the North/South Consultants' Manitoba Hydro spillway channel walleye spawning experiment at Grand Rapids in the Saskatchewan River. 1.78 million fry were returned to Lake Manitoba as replacement fry.

The section continued to assist the volunteer hatcheries throughout the province. Volunteer hatcheries operated at Lonely Lake Drain, Whitemud River near Westbourne, Icelandic River near Riverton and Dawson Bay. Some of the groups reported producing fry but number of fry produced from these

operations remains indefinite. A forest fire shut down Hydro to Dawson Bay, killing any eggs that they had at their operation.

750,000 whitefish fry hatched from eggs taken at Lake St. Martin in October 2002.

Two female sturgeons were captured in the Landing River, where it enters the Nelson River. The eggs taken from these two fish subsequently produced 14,429 fingerling that were stocked back into the Nelson River (including fingerlings used at Jenpeg Generation Station for final grow out by individuals from Cross Lake).

Trout species were produced at both Whiteshell and Grand Rapids Hatcheries for distribution into sport fishing lakes throughout the province.

Species raised at Grand Rapids include rainbow, brook and lake trout, as well as the hybrid splake (brook x lake trout). The Whiteshell Hatchery produces rainbow, brown and brook trout as well as the hybrid tiger trout (rainbow x brook). The section continued assisting volunteer organizations to enhance local stocks.

Table FI.2
Distribution to Sport Fishing Waters from Fish Hatcheries

Species	Fry and Eggs	Fish <18cm long	Fish ≥18cm long
Rainbow x Brown Hybrid	0	0	0
Brook x Lake Hybrid	0	32,500	1,880
Brook Trout	0	70,700	8,400
Lake Trout	0	75,000	0
Brown Trout	0	153,500	2,000
Rainbow Trout	0	253,000	43,450
Walleye	25,250,000		

(Excludes stocking to waterbodies with both sport and commercial fishing, such as Lake Manitoba.)

Table FI.3
12.4(f)2 Fish Culture

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	696.2	15.19	671.6	24.6	
Total Other Expenditures	249.6		225.2	24.4	

Aquatic Ecosystem Section

The Aquatic Ecosystem Section supports conservation, evaluation, restoration and enhancement of fish and fish habitat, to achieve a net gain in healthy, productive fish habitats and stocks.

The section reviews proposed developments that may affect surface waters, fish, and habitat, and recommends measures for mitigating or avoiding adverse impacts. 51 Proposals were reviewed under *The Environment Act*, ranging from water-treatment plants, wastewater treatment lagoons and land disposal of sludge, to mine developments or closures, food-processing plants, crop protection warehouses, rural water pipelines, oil and gas pipelines, winter road relocation, industrial facilities and forest company operating plans. In addition. 2 draft licenses; 2 draft Environmental Impact Assessment Guideline reviews, including expansion of the Red River Floodway; and 3 Environmental Impact Statements were reviewed. Other proposals not requiring review under *The Environment Act*, included 82 land sale/lease/permit applications, 119 municipal development plans/amendments/zoning bylaws, 17 miscellaneous and 18 pre-licensing environmental screenings.

As Manitoba Hydro moved forward with plans to build Wuskwatim Generating station on the Burntwood River, and the associated transmission network, Environmental Impact Statements for each were submitted by Hydro and reviewed by the section, to ensure that fisheries concerns were addressed.

The section participated as a member of the Technical Advisory Panel for Environmental Effects Monitoring of two pulp and paper mills, as well as 10 mines in Manitoba. EEM is required by regulation under *The Fisheries Act of Canada*.

In continuing to address concerns with introductions of aquatic organisms, the Committee on Introductions and Transfers of Aquatic Organisms in Manitoba, chaired by the section, drafted an updated list of prohibited species to be used as Schedule IX of the Manitoba Fishery Regulations made under *The Fisheries Act of Canada*. The committee also conducted a risk assessment, according to the National Code on Introductions and Transfers of Aquatic Organisms, of a proposal to introduce smallmouth bass to Hambone Lake near Thompson. The section also continued to represent Manitoba on the Task Group on Aquatic Invasive Species created by the Canadian Council of Fisheries and Aquaculture Ministers. This Task Group is charged with developing a national plan to address the threat of vectors not covered under the Code, including the aquarium and aqua-garden trade, live bait, live aquatic food, recreational boating, shipping and unauthorized introductions and transfers.

The section continued to work toward protection of endangered aquatic species in Manitoba, by working with the federally appointed Committee On the Status of Endangered Wildlife in Canada (COSEWIC) and Manitoba's own Endangered Species Advisory Committee (ESAC). In the past year, COSEWIC designated the shortjaw cisco as "threatened", which will afford it special protection under the new Canadian *Species At Risk Act*. Similarly, in June of 2003, ESAC reviewed four fish species, bigmouth buffalo, bigmouth shiner, chestnut lamprey and silver chub, all of which were determined to be "not at risk".

Instream flow issues continue to be significant. As development continues along the Assiniboine River, establishing instream flow reservations for protection of fish, fish habitat and ecosystem health is a high priority. A committee, led by section staff, from Manitoba Water Stewardship, Manitoba Conservation, Fisheries and Oceans Canada and University of Manitoba, continued work to determine the magnitude, frequency, timing and duration of water required to meet the needs of the aquatic ecosystem and the organisms that depend on it. The committee synthesized the biological, connectivity, geomorphological and hydrological data and developed instream flow recommendations for average, low and intermediate flow years at sites near Headingley, Highway 34, Brandon and St. Lazare. Results of ongoing, final analysis will allow for fine-tuning the instream flow recommendations.

The section leads a committee developing drain maintenance guidelines to meet the needs of *The Fisheries Act of Canada*. There is a lack of a common, clear understanding of habitat protection requirements (technical and process) in waterway maintenance, construction and reconstruction. These guidelines will ensure all resource interests are accommodated during all phases of waterway maintenance projects where Manitoba, rural municipalities, or conservation districts are proponents. A committee of Manitoba Water Stewardship, Manitoba Conservation and Fisheries and Oceans Canada staff, have created a comprehensive, but simple, process to guide all parties through pre-planning, planning, fieldwork and follow-up phases of waterway maintenance. A Stakeholder Advisory Panel has reviewed the proposed guidelines and process and provided comments. The committee is incorporating those suggestions into the guidelines.

The section continues to provide co-ordination and planning assistance for a number of watershed/stream restoration projects in Manitoba. An integrated planning approach joins local stakeholder groups and agencies in restoring the health and functions of watersheds. Project work includes in-depth aerial and ground-truthing surveys to determine land use practices and natural functions impacting the health of the watershed. Specific project sites are also identified, which require mitigation work to protect and enhance valuable watershed components, such as water quality and fish and wildlife habitat. The implementation and monitoring of site-specific project work are the next phases that are addressed in these long-term watershed restoration programs. Watershed initiatives are continuing on the Brokenhead, Valley, Black, and Seine Rivers and selective tributaries on the west side of Lake Manitoba (Narrows area). A new planning initiative is being implemented on the Vermilion River. Site-specific projects were implemented on the Brokenhead River in co-operation with the Brokenhead Restoration Committee. Project work included riparian enhancement along the river, instream nursery habitat enhancement for chestnut lamprey (a Species At Risk Act/Habitat Stewardship Program project) and mitigation of a barrier to fish migration along the river. The section also provided co-ordination and design assistance for a walleye spawning shoal project on the Black River, which was implemented by the Little Black River First Nations.

Staff continues to participate in Manitoba Envirothon by co-chairing the test-writing committee, preparing questions and assisting in the field day and oral components. Envirothon is an annual Olympic-style academic and environmental program. High school students (Senior I to IV) are tested in four discipline areas (aquatics, forestry, soils, and wildlife) and an annual theme (this year: Natural Resources in an Urban Environment). This year the competition was held at Brandon and 27 Manitoba school teams have entered. The winning team from Manitoba will represent their province at the National Canon Envirothon in West Virginia.

Table FI.4

12.4(f)3 Aquatic Ecosystem Management

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	414.9	8.00	452.3	(37.4)	
Total Other Expenditures	30.8		31.5	(.7)	

Sport and Commercial Fishing Management

The Sport and Commercial Fishing Section develops, administers and evaluates management programs and policies for sport, commercial and domestic use, including commercial bait fishing and trout

farming. It also manages the Northern Fishermen's Freight Assistance Program, distribution and reconciliation of commercial fishing licences and fish production information.

The Fishing Licence Fee Regulation and Fishing Licensing Regulation were amended to accommodate changes to angling licence fees for non-residents and resident anglers, and incorporated a new, separate licence for Canadians from other provinces that are not Manitoba residents. While Manitoba seniors still require an angling licence, alterations to angling fees resulted in Manitoba Seniors now being able to obtain a Seniors Conservation Licence at no cost. Those seniors wanting a regular limit of fish must still purchase a Resident Regular Angling Licence. Effective for the 2004 season, residents from other provinces are required to purchase a Canadian Resident Conservation Licence for $20 or a Canadian Resident Regular License for $40. These fees are similar to or lower than fees charged to other Canadians by provinces with similar licences. In addition, effective May 1, there were increases of $2 for conservation and regular licenses for Manitoba residents. Fees for non-residents of Canada increased from $22 to $30 for a Conservation Licence and from $40 to $55 for a Regular Licence.

The Commercial Fishermen's Records Regulation amendment requires every fisherman's representative or holder of a Special Dealer's Licence, when selling fish in Manitoba, to issue to the purchaser an itemized receipt that specifies the name and address of the seller, date of transaction, species, form and weight of fish sold. An itemized receipt will improve verification of source and tracking of fish for enforcement purposes. This quota harvest information is needed to track production and monitor quotas on lakes throughout the province, to ensure proper management of the fishery. It will also prevent persons transporting over limits of fish caught by recreational fishing and purporting them to be fish lawfully purchased.

The section co-ordinated the fisheries submission for adjusting fisheries set fine penalities under *The Summary Convictions Act*. The amendment to the Offense Notice Regulation was published in the Manitoba Gazette and increases in fisheries set fines came into force on January 1, 2004.

Manitoba Water Stewardship continues to work with First Nations and other stakeholders to develop fisheries management approaches that accommodate constitutional obligations and other stakeholder interests. Staff assisted regional staff working with stakeholders in Dauphin Lake fishery, to negotiate an agreement and co-management plan governing harvest of walleye, and continued to develop a management approach with regional staff and Sagkeeng First Nation for fisheries issues. A working group was also formed with Indian and Northern Affairs Canada's Regional Economic Development program to discuss and co-ordinate fisheries issues of mutual interest.

Director's Authorizations, which allow small retailers to sell fish for commercial fishermen, were processed for 31 fishermen consigning fish to five retailers.

Lake Winnipegosis

The department has established a broad stakeholder management board to advise on management of Lake Winnipegosis, towards the rehabilitation of the walleye population. The Lake Winnipegosis Management Board consists of four First Nation appointees, four department appointees and a Chair. The board held its inaugural meeting in October 2003 and met six times in 2003/04. To date, the board has worked on identifying and priorizing issues on the lake related to the following key elements deemed essential for recovery of the walleye fishery: 1) reduction in commercial harvest; 2) reduction in cormorant predation; 3) reduction in the harvest of pre-spawned walleye during spawning migrations; 4) increased walleye stocking rates; and 5) habitat monitoring and enhancement. The board also initiated planning for round table meetings to be held in communities around the lake to ensure all interested parties have the opportunity to provide input towards development of a sustainable fishery. In the meantime, the board is encouraging representatives from stakeholder groups, communities and First Nations to approach the board to be put on the agenda if they have ideas, issues and concerns

that they would like to present. Also, a representative of the board has already attended several local stakeholder group meetings on fisheries issues. During open-water and winter fisheries, pickerel production was 68,992 kg (152,100 lbs), 8% below last year.

Lake Winnipeg

A sub-committee recommended by the Lake Winnipeg Commercial Fisheries Management Advisory Board continues to assist in the development of a long term strategy for the commercial fishery. The plan is to focus on commercial fishing issues and to provide management direction for the Lake Winnipeg commercial fisheries for the next 3 to 5 years. To date, a number of needs/issues and opportunities have been identified and the Lake Winnipeg Commercial Fishermen's Advisory Board has ratified a draft vision statement. During open-water and winter fisheries, pickerel production (3.4 million kg) continues to be high in part due to strong year classes that are taking advantage of smelt as a food source and demonstrating high growth rates. Whitefish production increased (2.0 million kg) by 25% from the previous year while sauger production (739,640 kg) was the same as last year.

Lake Manitoba

A limited winter perch fishery using 3" mesh nets with controls in place to minimize impact on pickerel and sauger was continued in the south basin of Lake Manitoba. Pickerel production (358,616 kg) in winter was 47% higher than last year, while sauger production (22,272 kg) increased by 2%, and perch production (135,853 kg) decreased by 55%.

Other Programs

Chemawawin Cree Nation (CCN) voluntarily ceased fishing Cedar Lake in 1997, in order to regenerate the fishery and re-opened the fishery in the summer of 2003. The Committee on Economic Development of Cabinet (CEDC) has hosted several meetings with the Chief and Council of Chemawawin Cree Nation, Communities Economic Development Fund, Indian and Northern Affairs Canada (INAC) and Fisheries Branch to discuss options and approaches in the buy-out and consolidation of commercial fishing licences on Cedar Lake. The number of fishers on the lake would be reduced from 81 to approximately 40.

There were 25 licensed fish-farmers and about 600 hobby farmers in private waters. Four major operators (two fingerling producers and two brokers/importers) distribute fingerlings to hobby farmers each spring. Six fee-for-fishing businesses, where customers pay to fish in privately-stocked ponds or Crown waters, generally provide easy access to fishing from shore and are ideal for small children and individuals otherwise unable to angle. Fish farmers reported selling 184,500 rainbow trout fingerlings and 9,800 arctic char fingerlings. Grow-out operations sold 9,800 kgs of rainbow trout and 24,690 kgs of arctic char.

Seventy-six commercial baitfish fishers were licensed, producing and selling about 97,800 kgs of frozen baitfish. Thirty-nine live baitfish fishers produced about 129,300 dozen baitfish. Gross sales were about $813,300. Thirty-two leech harvesting licences were issued, with about 1,830 kgs produced, valued at about $84,000. Sixty-two live bait dealer licenses were issued, allowing retail sale of live baitfish and leeches.

Fisheries Branch continues to co-ordinate the Urban Angling Partnership (UAP), comprising Manitoba, Winnipeg, Manitoba Wildlife Federation, Fish Futures, Mid-Canada Marine Dealers Association, and Don Lamont of The Complete Angler, that promotes angling in the city, especially the excellent opportunities on Red and Assiniboine Rivers. UAP activities included:

- *Learn to Fish Clinics*, offered through Winnipeg Community Services Department Leisure Program, aimed at families, new anglers, and those who have not fished for some time. Tackle dealers

provide bait, tackle, and instruction, while manufacturers provide equipment. Fish and game clubs provide volunteer assistance.

- *Winnipeg Fish Festival*: a one-day event at The Forks, showcases the recreational angling community and promotes angling in the city as an affordable leisure activity. An estimated 5,000+ visitors attended fish-filleting demonstrations, kids' fishing educational stations, fishing displays, arts and crafts, on-stage seminars, and casting competitions.
- *Fish Winnipeg Media/Corporate Challenge*: a one-day event exposing media and corporate communities to this world-class recreational fishery. The event introduces Winnipegers to this fishery, showcases the angling community, promotes angling as a healthy, self-esteem-building outdoor leisure activity for youth, and raises funds to benefit Winnipeg youth/youth-at-risk angling programs. Over $17,500 was raised that was targeted at inner city youth-at-risk, and about 750 children enjoyed an angling experience. Plans for 2004 include expansion of the event and additional kids' fishing camps.
- *Urban Fishing Derby:* The derby is a one-day event held at the Forks that promotes recreational angling. The derby provides an opportunity for families to participate in a program that promotes angling in the fall season. Last year, over 300 individuals participated in the event.

The 2004 Anglers' Guide was published in co-operation with Fish Futures. The larger format allowed for a simpler presentation of angling regulations and a saving of sufficient space to allow the inclusion of pictures of the more popular species that are sought after in Manitoba. The guide summarizes angling regulations, highlights new and proposed regulations and includes management and other information. Anglers and user groups continued to play an important role in developing regulations and attention has continued to be focused on simplifying regulations without diminishing conservation.

Table FI.5

12.4(f)4 Sport and Commercial Fishing Management

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Salaries and Employee Benefits	629.3	12.00	635.2	(5.9)	
Total Other Expenditures	48.3		39.1	9.2	

Table FI.6

Angling Licence Sales and Revenue 1993-94 to 2002-03

Year	Resident/Manitoba – Sr. Conservation			Total: Resident of Manitoba	
	Number	Fee $	Revenue $	Number	Revenue $
1997-98	7,878	5.61	36,615.58	7,878	36,615.58
1998-99	8,700	5.61	40,315.00	8,700	40,315.00
1999-00	8,935	5.61	41,411.35	8,935	41,411.35
2000-01	8,532	5.61	39,537.52	8,532	39,537.52
2001-02	8,621	5.61	39,940.81	8,621	39,940.81
2002-03	8,341	5.61	38,657.01	8,341	38,657.01

Year	Resident of Canada-Regular			Resident of Canada-Conservation			Total: Resident of Canada	
	Number	Fee $	Revenue $	Number	Fee $	Revenue $	Number	Revenue $
1993-94	58,833	12.50	706,624.50	73,227	7.50	512,963.00	132,060	1,219,587.50
1994-95	57,783	12.50	694,044.00	77,716	7.50	544,498.00	135,499	1,238,542.00
1995-96	55,235	12.50	663,355.00	76,844	7.50	538,289.00	132,079	1,201,644.00
1996-97	52,158	12.50	626,742.00	75,081	7.50	526,422.50	127,239	1,153,164.50
1997-98	51,859	14.02	676,760.18	73,603	8.41	546,849.23	125,462	1,223,609.41
1998-99	57,381	14.02	748,238.62	84,000	8.41	623,386.00	141,381	1,371,624.62
1999-00	57,567	14.02	750,690.37	84,938	8.41	630,356.58	142,505	1,381,046.92
2000-01	56,092	14.02	731,276.84	85,256	8.41	632,700.96	141,348	1,363,977.80
2001-02	56,951	14.02	742,473.02	86,223	8.41	639,893.43	143,174	1,382,366.45
2002-03	54,801	14.02	714,456.02	81,629	8.41	605,678.89	136,430	1,320,134.91

Year	Non-Resident of Canada–Regular			Non-Resident of Canada-Conservation			Total: Non-Resident of Canada	
	Number	Fee $	Revenue $	Number	Fee $	Revenue $	Number	Revenue $
1993-94	8,770	32.50	280,744.00	20,742	17.50	352,905.50	29,512	633,649.50
1994-95	8,299	32.50	265,668.50	21,906	17.50	372,702.50	30,205	638,371.00
1995-96	7,821	32.50	250,369.50	22,448	17.50	381,856.00	30,269	632,225.50
1996-97	6,840	32.50	218,945.50	21,757	17.50	370,199.50	28,597	589,145.00
1997-98	6,712	37.38	244,557.56	23,406	20.56	458,473.36	30,118	703,030.92
1998-99	7,149	37.38	260,237.62	26,223	20.56	513,312.88	33,372	773,550.50
1999-00	7,192	37.38	261,840.96	27,151	20.56	531,532.56	34,343	793,373.52
2000-01	6,130	37.38	223,166.40	29,959	20.56	586,452.04	36,089	809,618.44
2001-02	6,120	37.38	222,778.60	27,716	20.56	542,490.96	33,836	765,269.56
2002-03	6,075	37.38	221,122.50	26,121	20.56	511,251.76	32,196	732,374.26

Year	Total Regular Licences		Total Conservation Licences		Total Licences	
	Number	Revenue $	Number	Revenue $	Number	Revenue $
1993-94	67,603	987,368.50	93,969	865,868.50	161,572	1,853,237.00
1994-95	66,082	959,712.50	99,622	917,200.50	165,704	1,876,913.00
1995-96	63,056	913,724.50	99,292	920,145.00	162,348	1,833,869.50
1996-97	58,998	845,687.50	96,838	896,622.00	155,836	1,742,309.50
1997-98	58,571	921,317.74	104,887	1,041,938.17	163,458	1,963,255.91
1998-99	64,530	1,008,476.24	118,923	1,177,013.88	183,453	2,185,490.12
1999-00	64,759	1,012,531.30	121,024	1,203,300.49	185,783	2,215,831.79
2000-01	62,222	954,443.24	123,747	1,258,690.52	185,969	2,213,133.76
2001-02	63,071	965,251.62	122,560	1,222,325.20	185,631	2,187,576.82
2002-03	60,876	935,578.52	116,091	1,155,587.66	176,967	2,091,166.18

Notes:
1. Revenue figures are net (less vendor's commission).
2. Resident of Manitoba Senior's Conservation Licences were introduced in 1997-98.
3. Starting with the 1999-2000 season – angling licences will be valid from May 1 – April 30. Licence sales statistics for the 2003-04 Annual Report will be based the most recent complete season i.e. the 2002-03 season.

Table FI.7
Fishermen Employed in Manitoba Commercial Fishery, 2002-2003

	Northern Lakes	Lake Winnipeg	Lake Manitoba	Lake Wpgosis.	Other Lakes	Overall
Summer						
Licence Holders	490	871	83	50	25	1,458
Hired Men or Helpers	216	174	109	76	23	582
TOTAL	706	1045	192	126	48	2,040
Winter						
Licence Holders	182	183	463	173	212	1,188
Hired Men or Helpers	212	34	336	122	59	747
TOTAL	394	217	799	295	271	1,935
Annual						
Licence Holders	505	913	479	176	212	2,204
Hired Men or Helpers	233	182	359	165	59	982
TOTAL	738	1095	838	341	271	3,186

Note: Those who fish in more than one area or season, or who fish both as hired men and licence holders, are counted only once in the appropriate Total column. Where hired-man-and-licence-holder duplication occurs, the individual is counted as a licence holder. Therefore, the table does not total horizontally or vertically.

Table FI.8
Commercial Fishing Production (Round kg), Total Value and Employment (Licensed Fishermen Plus Hired Men) 1993-94 to 2002-2003.

	Northern Lakes		Lake Winnipeg		Lake Manitoba		
Year	Weight (kg)	$ Value	Weight (kg)	$ Value	Weight (kg)	$ Value	
1993-94	1,867,550	2,369,100	4,217,700	7,954,350	710,350	1,580,400	
1994-95	2,572,500	3,887,600	4,655,500	11,174,800	821,000	2,747,250	
1995-96	3,081,050	5,033,450	4,836,400	12,177,900	2,027,500	3,462,250	
1996-97	3,339,650	4,290,500	4,312,600	8,864,050	1,344,450	1,840,450	
1997-98	2,621,550	3,565,750	3,991,600	8,340,050	1,518,000	2,207,800	
1998-99	2,761,800	4,350,500	4,825,600	14,119,350	1,734,450	2,284,800	
1999-00	3,235,650	5,087,500	5,419,050	16,983,500	1,943,950	2,416,950	
2000-01	3,318,650	5,608,800	6,217,850	20,386,750	2,342,400	2,847,050	
2001-02	3,188,100	5,341,850	6,237,950	20,380,350	2,115,750	3,797,100	
2002-03	3,260,350	5,750,000	6,204,150	20,894,400	2,286,850	2,877,650	

	Lake Winnipegosis		Other Lakes		Manitoba Total		
Year	Weight (kg)	$ Value	Weight (kg)	$ Value	Weight (kg)	$ Value	Total Employment
1993-94	1,074,350	477,000	1,034,150	1,586,050	8,904,100	13,966,900	3,173
1994-95	775,350	436,400	989,000	1,911,550	9,813,350	20,157,600	3,125
1995-96	1,385,000	659,750	1,195,300	1,555,900	12,525,250	22,889,250	3,345
1996-97	1,635,650	682,500	1,190,800	1,089,350	11,823,150	16,766,850	3,325
1997-98	1,465,050	842,800	915,700	725,050	10,511,900	15,681,450	3,237
1998-99	2,106,550	1,892,650	775,000	1,273,000	12,203,400	23,920,300	2,990
1999-00	2,719,850	2,266,250	778,550	951,850	14,097,050	27,706,050	3,216
2000-01	2,753,550	2,004,200	892,250	1,131,450	15,524,700	31,978,250	3,224
2001-02	2,577,000	1,846,600	702,400	917,200	14,821,200	32,283,100	3,229
2002-03	2,681,150	1,416,400	661,250	827,800	15,093,750	31,766,250	3,186

NOTE: *Total value includes both Initial Value and Final Payment.*

Table FI.9

Commercial Fishing Production (Round Weights kg) by Area and Total Value By Species, 2002-2003.

Species	Northern Lakes		Lake Winnipeg		Lake Manitoba		Lake Winnipegosis	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Bass			24,400	3,500				
Carp	500	400	155,800	26,200	372,850	70,400	81,450	147,100
Goldeye	2,100	700	2,050	600			Trace[2]	Trace[2]
Maria	12,800	2,100	3,050	5,200		2,300		1,150
Mullet	429,550	128,250	222,350	35,350	493,350	607,600	1,163,150	871,600
Perch	1,300	1,600	63,500	25,350		304,300	100	58,050
Pickerel	712,650	82,750	2,902,100	392,550		244,400	54,250	17,250
Pike	740,250	200,300	91,700	13,300		165,750	39,900	175,850
Sauger	17,000	900	576,200	160,650		20,700	Trace[2]	Trace[2]
Trout	28,550	2,500						
Tullibee	95,650	9,600	100	250				
Whitefish	706,150	84,750	1,139,400	360,550		5,200	34,550	36,750
Total	2,746,500	513,850	5,180,650	1,023,500	866,200	1,420,650	1,373,400	1,307,750

Species	Other Lakes[1]		Total Production					Total Value $[3]
	Summer	Winter	Summer	Winter	Total	Summer	Winter	Total
Bass			24,400	3,500	27,900	14,400	2,600	17,000
Carp	29,450	91,850	640,050	335,950	976,000	251,100	149,150	400,250
Goldeye		50	4,150	1,350	5,500	12,900	4,250	17,150
Maria		250	15,850	11,000	26,850	3,000	2,900	5,900
Mullet	2,950	160,500	2,311,350	1,803,300	4,114,650	598,700	490,050	1,088,750
Perch	50	24,650	64,950	413,950	478,900	255,050	1,566,600	1,821,650
Pickerel	2,150	94,100	3,671,150	831,050	4,502,200	17,209,450	3,628,950	20,838,400
Pike	2,550	144,350	874,400	699,550	1,573,950	612,550	505,000	1,117,550
Sauger		100	593,200	182,350	775,550	2,424,850	733,450	3,158,300
Trout			28,550	2,500	31,050	24,300	2,000	26,300
Tullibee		2,900	95,750	12,750	108,500	74,150	10,150	84,300
Whitefish	8,300	97,050	1,888,400	584,300	2,472,700	2,320,550	870,150	3,190,700
Total	45,450	615,800	10,212,200	4,881,550	15,093,750	23,801,000	7,965,250	31,766,250

1 Includes Chitek , Crab, Cross Bay, Dauphin, Inland, Little Limestone, Little Strong, Mire-Proulx, Pelican, Red Deer, Reedy, St. Martin, Strong, Swan, Tan, Waterhen, William.

2 Small amount.

3 Total $ value includes both initial value and final payment.

NOTE: Commercial fishing statistics for 2003-2004 fiscal year were not available in time to be included in this report. They will appear in the annual report for the next fiscal year.

Northern Fishermen's Freight Assistance

The Northern Fishermen's Freight Assistance (NFFA) Program assists marginal commercial operations by partial subsidization of transporting certain species to Winnipeg. Fishers pay the first 20¢/kg of freight, Manitoba pays the next 45¢/kg and fishers pay any costs over 65¢/kg. Eligible species are whitefish, pike, lake trout, perch, goldeye, tullibee and sucker. Subsidy payments to fishers are issued weekly by Freshwater Fish Marketing Corporation (FFMC) on behalf of Manitoba. Fisheries allowed to opt out of FFMC are paid by the branch at season end.

To ensure expenditure does not exceed the $410,000 cap set in 2000, fishers receive an initial payment, usually 70% of their estimated eligibility. They receive final payment at the fishing year end. While a full 30% final payment may not be possible when production is high, a final payment higher than 30% may occur in low-production years. NFFA paid about $306,000.00 to 369 fishers for 2003 summer season. Payments to about 83 fishers for winter season will likely be about $94,000.

Table FI.10

12.4(f)5 Northern Fishermen's Freight Assistance

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Other Expenditures	410.0		410.0	0.0	

Fisheries Enhancement Initiative

In its 11th year, the FEI has funded 264 projects directed at enhancing fish populations and their habitat, as well as funding educational opportunities. Over the years, a number of projects involved watershed inventory studies and this year was no exception with studies initiated for Vermilion River, Willow Creek, Little Souris River, Rat River and Upper Pembina River.

Many project submissions result once the inventories are completed and a list prioritizing sites is compiled. Ongoing stream bank restoration through fencing, off shore waters, controlled crossings and revegetation work on Lake Wahtopanah, Minnedosa Lake, West Souris River, and Boggy Creek are examples of this.

Educational opportunities existed through:

- presentations to school groups on fish, fish habitat and sport fishing by Don Lamont and Resource Officers, and
- the creation of a 3-D display case featuring Manitoba's fish species along with a brochure.

Projects physically improving fish habitat included:

- enhancement of lamprey habitat in Brokenhead River,
- construction of riffles in Seine River,
- fish-way design on the Brokenhead River,
- purchasing aeration equipment for Hooper's, Shoal and Bower Lakes and Mary Jane reservoir,
- designing an outlet control structure for Whitemouth Lake, and
- assessing fish habitat and fish utilization of the Black and O'Hanley Rivers.

Table FI.11

12.4(f)6 Fisheries Enhancement Initiative

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Other Expenditures					
Grants/Transfer Payments	348.2		350.0	(1.8)	
Total Other Expenditures	348.2		350.0	(1.8)	

Regional Fisheries Operations

Interlake Region

The start of the Lake Winnipeg commercial fishing season was delayed until 80% of female pickerel had spawned. The Lake Winnipeg Fisherman's Advisory Board convened twice during the year. A sub-committee recommended by the Lake Winnipeg Commercial Fisheries Management Advisory Board continue to assist in the development of a long term strategy for the commercial fishery. The plan is to focus on commercial fishing issues and to provide management direction for the Lake Winnipeg commercial fisheries for the next 3 to 5 years. During open-water and winter fisheries, pickerel production (3.4 million kg) continues to be high in part due to strong year classes that are taking advantage of smelt as a food source and demonstrating high growth rates. Whitefish production increased (2.0 million kg) by 25% from the previous year while sauger production (739,640 kg) remained stable.

A limited winter perch fishery using 3" mesh nets with controls in place to minimize impact on pickerel and sauger operated from January 1 to February 28 in the south basin. The 3 3/4" mesh fishery in the North Basin was extended to March 31, 2004. Pickerel production (358,616 kg) in winter was 47% higher than last year, while sauger production (22,272 kg) increased by 2%, and perch production (135,853 kg) decreased by 55%.

The region continued integrating its fish habitat work with Fisheries and Oceans Canada and a large number of habitat issues were dealt with in the past year.

Table FI.12
Commercial Fish Harvest, Interlake Region (kg round weight)

Lake Manitoba	Pickerel	Sauger	Perch
1999-00	311,200	62,820	83,860
2000-01	411,700	27,900	86,460
2001-02	263,640	15,460	445,280
2002-03	238,700	21,600	304,300
2003-04	358,752	22,272	135,853

Lake Winnipeg	Whitefish	Pickerel	Sauger
1999-00	928,864	2,727,955	949,500
2000-01	1,360,000	3,614,500	845,500
2001-02	1,710,300	3,211,460	664,780
2002-03	1,597,700	3,212,700	739,000
2003-04	2,009,402	3,393,744	739,640

Western Region

Watershed management and planning is a constantly growing initiative with staff sitting on or acting in an advisory capacity to approximately 20 groups in the region. There is a trend towards conservation districts and watershed planning groups/boards taking the initiative in proper land use practices and water management.

The co-management negotiations between Manitoba and the West Region Tribal Council (WRTC) provide a format and process, creating a model for future initiatives with First Nations. Conservation of

fish stocks in Dauphin Lake has been the first priority in the process and is being accomplished through co-operation by all users. Co-management discussions will continue with WRTC to fine-tune and finalize agreements respecting the resource allocation on Dauphin Lake. The buy-back of commercial licences for re-distribution to First Nations continues.

A Lake Winnipegosis Management Board has recently been formed and the branch provides a high degree of support in the operation of this board. The board was put together as a result of numerous recommendations by government and consultants. Work continued with the Lake Winnipegosis Management board to develop a management plan for the lake. Round table meetings are planned for the upcoming year for communities around the lake, which should provide the public opinion in setting priorities for a management plan.

Numerous Fisheries Enhancement Initiative projects were reviewed and ongoing projects were monitored. Working in conjunction with the Fish and Lake Improvement Program for the Parkland Region (FLIPPR), a total of three aeration systems were installed in the region. Habitat conditions are monitored during the winter by checking 50 to 60 lakes for dissolved oxygen.

Index netting was carried out on six lakes to evaluate fish populations for numbers, growth rates, maturity, food habits, etc. In addition to index netting there were six lakes checked for stocking success and winterkill assessments.

Northwest Region

Completed annual fish stock assessment on Cedar Lake and Wekusko Lake.

The Cedar Lake Fishery re-opened after a voluntary five-year closure. Fishing success was excellent and the lake quota was caught.

Participated in meetings with the Saskatchewan River Sturgeon Management Board. Annual tagging and data collection program of Saskatchewan River lake sturgeon was completed in conjunction with the ten-year management plan.

Staff is currently working with the Kississing Lake Management Committee to review the existing management plan for the multi use fishery on Lake Kississing. Department and regional staff responded appropriately to protect this fishery which had experienced recent domestic treaty netting activity.

Rocky Creek Fisheries Committee has completed year one of a two year study on the fish community within the Reader/Root wetland complex and fish movements in the Rocky Creek Fishway.

Participated in meetings with various commercial fishing associations, resource management boards, community groups and educational establishments.

Northeast Region

Low water levels affected both commercial fisheries and recreational angling though out the region.

Most commercial fisheries continued to produce well, with the exception of Southern Indian Lake where concerns about the whitefish fishery lead to a voluntary reduction in harvest. Manitoba Hydro, Manitoba Conservation, Manitoba Water Stewardship and representatives of South Indian Lake met to develop an environmental monitoring plan that investigated whitefish spawning habitat and increased monitoring of fish stocks. This is expected to develop into a long-term initiative.

Test netting confirmed that Setting Lake stocks now appear to be well on their way to a complete recovery. Local initiatives to protect spawning walleye were a key component of this recovery.

The Nelson River Sturgeon Co-Management Board had its most successful sturgeon stocking year ever. Sturgeon stockings were highly publicized, with local schools. A new rear-out facility was built at Jenpeg Generating Station with Fisheries Enhancement Initiative funding. It adds to the capacity at Grand Rapids Fish Hatchery, and increases the number of fingerling sturgeon that can be raised.

Eastern Region

A total of 66 waterbodies were stocked with 16,414,000 fish (4,700 brook trout fingerlings, 52,000 brown trout fingerlings, 25,340 rainbow trout fingerlings, 1,800 splake fingerlings and 16,413,000 walleye fry and fingerlings).

Completed the fifteenth year of the Winnipeg River sturgeon monitoring and tagging program, expanding into the area below Great Falls. Initiated PIT tagging this year to address tag loss problems associated with population estimates.

Continued working towards the development of the Winnipeg River Fisheries Management Plan with Sagkeeng First Nation and completed a draft of the Interim Conservation Management Approach to address specific issues.

The feasibility study for the Whitemouth Lake control structure has been completed as the first step in the development of a sustainable recreational fishery on Whitemouth Lake.

Numerous fisheries enhancement projects have been identified for the Brokenhead River. Several of these were completed through the Brokenhead River Restoration Committee.

The development of a Recovery Strategy for the Carmine Shiner (a SARA listed species) was initiated in cooperation with Fisheries and Oceans, Canada.

Conducted index netting on Lac du Bonnet, Bird, Quesnel, Manigotagan, White and Beauchemin Lakes

Black River First Nation completed the walleye spawning riffle enhancement project and has now expanded its environmental program to include a wide variety of projects.

The Manitoba Water Services Board

The Manitoba Water Services Board (MWSB) was established under the authority of *The Manitoba Water Services Board Act* in 1972. Its basic objectives are to provide cities, municipalities, towns, villages and individual farmers, with technical and financial support in developing and/or upgrading water and/or sewer infrastructure.

The MWSB's activities are directed by a five-person board, chaired by the Deputy Minister of Manitoba Water Stewardship. The board, which prepares an annual report each fiscal year as a statutory requirement, reports to the Legislature through the Minister of Water Stewardship. (In November 2003, the Board was transferred from Manitoba Intergovernmental Affairs to the newly created Manitoba Water Stewardship.)

Day to day activities are conducted by staff in the head office in Brandon and also by field staff located in Beausejour, Dauphin, Hamiota and Stephenfield. The board is also responsible for the Conservation Districts Program and has an office in Gladstone to manage the program.

The specific objectives of the MWSB are identified in the legislation and met through the grant programs described below and in the section for Expenditures Relating to Capital. These grant programs briefly are: Sewer and Water Program to assist with municipal sewer and water infrastructures; and the Conservation Districts Program to provide sustainable Soil and Water Management Programs in 16 conservation districts, in partnership with participating municipalities. A portion of the Sewer and Water Program is allocated to a federally cost shared program known as Water Development, whose primary objective is to provide water to rural residents (rural pipelines).

Table WS.1

13-4(b) The Manitoba Water Services Board

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE	Estimate 2003/04 $	Variance Over/(Under)	Expl. No.
Total Salaries	1,614.3	30.0	1,609.1	5.2	
Total Other Expenditures	351.2	0.0	357.6	(6.4)	

Sewer and Water Program

The MWSB provides technical and financial assistance to municipalities to develop water and sewer systems. Projects where there are documented public health or environmental problems and/or have economic benefits to the Province and the municipality received 50% provincial grants. Projects, which are primarily of local improvement in nature, receive 30% provincial grants. The board provides project management for all projects undertaken, including retaining consulting engineers, public tendering of construction contracts and interim financial management.

The board also provides technical and financial assistance to rural residents, a federally cost shared program known as the Water Development Program. The board's grant is generally 33 1/3% of the eligible project costs.

The board signed agreements with a number of communities to undertake sewer and water projects. Totals shown below reflect projects in design phases; under construction; and completed in 2003/04.

Details of the programs and projects may be obtained from the Manitoba Water Services Board's Annual Report.

2003/04 Total Clients Serviced	Provincial Grants	Expl. No.
66 Municipalities	9,839.0	1.,2.

Explanation Numbers:

1. Provincial grants enable the Board to carry out sewer and water projects totaling about $25.0M. The total includes Municipal, as well as Federal, cost sharing on projects.
2. In addition to the Water and Sewer Program, the Board also acted as Project Manager in the development of Simplot "Off-site Works" in Portage la Prairie, for water and wastewater systems totaling $22.0M.

Table WS.2
13-5(b)(2b) Sewer and Water Program

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE	 $	Variance Over/(Under)	Expl. No.
Sewer and Water Grants	9,839.0	0.0	10,800.0	(961.0)	1.

Explanation Number

1. Under expenditure primarily due to delays in obtaining Environmental Licenses for 2 projects.

Conservation Districts Program

Manitoba provides grants to support the Conservation Districts Programs, such as water management, soil conservation, water storage, wildlife habitat, historic resources and recreation, public education, administration and a variety of other programs that promote sustainable resource management.

In 2003/04 provincial grants totalling $3,975,000 were provided to 16 CDs, as follows:

• Whitemud Watershed	$880,000
• Turtle River Watershed	$400,000
• Alonsa	$300,000
• Turtle Mountain	$300,000
• Cooks Creek	$335,000
• Pembina Valley	$298,000
• West Souris River	$200,000
• Upper Assiniboine River	$250,000
• Intermountain	$200,000
• Little Saskatchewan River	$120,000
• Kelsey	$130,000
• Lake of the Prairies	$80,000
• Tiger Hills	$100,000
• La Salle Redboine	$200,000
• Mid Assiniboine River	$90,000
• Seine-Rat River	$92,000

Details may be obtained from the Annual Report for the Conservation Districts of Manitoba.

Table CD.1

13-5(b)(2c) Conservation Districts

Expenditures by Sub-appropriation	Actual 2003/04 $	Estimate 2003/04 FTE	Estimate 2003/04 $	Variance Over/(Under)	Expl. No.
Conservation Districts	3,975.0	0.0	3,975.0	0.0	

Infrastructure and Minor Capital Projects

Water Projects

Projects (most being multi-year) included Assiniboine River dike refurbishment, right-of-way acquisition for South-Buffalo Creek project, resurfacing hydraulic cylinder rods on the Red River Floodway Inlet Control Structure, completion of construction of works under the SWII Agreement in the Portage Diversion and completion of construction of channel works and crossing number three on the South Buffalo Creek channel project. A number of waterway crossings were refurbished and right-of-way acquisition on the Shellmouth Dam joint project has commenced.

Table IM.1

12.8(b) Infrastructure and Minor Capital Projects-Water Projects

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Other Expenditures	5,512.9		4,770.4	742.5	

Amortization and Other Costs related to Capital Assets

The department expended the annual amortization costs of all completed assets, based on the useful life of each asset. Assets purchased or constructed in 2003-04 were expended at one-half the annual amortization rate. The amortization expense also included the portion of corporate information technology projects attributable to the department.

Table ACA.1

12.9 Amortization and Other Costs related to Capital Assets

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
(a) Desktop Services					
(1) Amortization Expense - Hardware and Transition	32.8		32.8	0.0	
(2) Amortization Expense - Enterprise Software	0.0		0.0	0.0	
(3) Enterprise Software Licenses	32.8		32.8	0.0	
(b) Amortization Expense	100.2		100.2	0.0	
(c) Interest Expense	32.8		32.8	0.0	

Table ACA.2

13.8 Amortization and Other Costs related to Capital Assets

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
(a) Desktop Services					
(1) Amortization Expense - Hardware and Transition	6.8		6.8	0.0	
(2) Amortization Expense - Enterprise Software	0.0		0.0	0.0	
(3) Enterprise Software Licenses	8.1		8.1	0.0	
(b) Amortization Expense	11.7		11.5	.2	

Floodway Expansion

Recomputation of "Natural" Rating Curve at the Floodway Inlet

These expenditures were related to an extension of an existing consulting contract with Acres Manitoba Ltd. to provide an updated "natural" rating curve for the operation of the Floodway Inlet Control Structure (Gates). Following the 1997 Flood, The International Joint Commission recommended the Province of Manitoba review and update the Natural Rating Curve for the Floodway, so as to provide upstream residents with greater confidence that operation of the Floodway can be in accordance with its original guiding directives. This work was also required because recently announced legislation under *The Red River Floodway Act*, describes damage compensation principles that require accurate flood level descriptions relative to the "natural" water levels.

KGS Lead Contract

These expenditures were related to work undertaken by KGS Group Ltd., as the Lead role consultant in the Project Definition/Environmental Assessment phase 1 of the Floodway Expansion Project. The phase 1 work, initially overseen by Manitoba Conservation, consisted of preliminary design and environmental baseline data gathering. This work was required to advance the project sufficiently to enable the Manitoba Floodway Expansion Authority to submit the Environmental Impact Statement.

Advance Land Acquisition

These expenditures were related to advance land purchases on the Floodway Expansion Project. An owner of property adjacent to the Floodway Right-of-way had imminent plans to construct a residential building on the property. When he became aware the Floodway Expansion Project may involve the requirement to acquire his property, he suspended building plans for that property and requested his property be bought out so as to afford him the opportunity to pursue purchase of an alternate building site. As this property acquisition took place before final design had been completed for the Floodway Expansion Project, and hence ahead of formal property acquisition for the project, it was deemed "advance" land acquisition. The expenditures included the cost of the property and the cost of legal and other fees associated with the title transfer process (i.e. LMS charges, etc.).

Table FE.1
27.3/27.4 Red River Floodway Renewal and Expansion

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Total Other Expenditures	3,260.1		3,260.1		

*Funding for 27.3/27.4 Red River Floodway Renewal and Expansion was allocated from Canada-Manitoba Enabling Vote 26.1(b) Red River Floodway Renewal and Expansion.

Flood Proofing Programs

Funding assistance continued for flood protecting homes, businesses, farms and communities in Red River Valley.

Manitoba Water Stewardship administers the $100 million Phase II Canada Manitoba Partnership Agreement on Red River Valley Flood Protection. The $50 million provincial contribution was allocated among five program elements as follows:

- Home/business flood proofing ($20.3 million)
- Community diking ($17.5 million)
- City of Winnipeg work ($5.2 million)
- Environmental impact mitigation ($2.5 million)
- Provincial flood control infrastructure ($4.5 million)

All projected funded by the Provincial Flood Control Infrastructure Element were completed in fiscal year 2001 - 2002. Funding for individual projects under the Home and Business Element and the Environmental Impact Mitigation & Scientific Data Element terminated on March 31, 2003. Activities for the Home and Business Flood Proofing Program in 2003/04 were limited to report preparation and to addressing outstanding issues.

As of March 31, 2004 all Community Ring Dike Projects, including Grande Pointe, St. Mary's Road, Ste. Agathe, Niverville, Riverside, Emerson, Dominion City, Rosenort and St. Lazare were essentially completed. A variety of minor deficiencies remain to be addressed and seeding of dikes will be completed in the Spring of 2004. In 2003/04, legal surveys were carried out for Dominion City, Gretna, Lowe Farm, Rosenort and Ste. Agathe and St. Lazare projects.

During the 2004 summer construction season, the final Community Ring Dike Project under the Canada, Manitoba, City of Winnipeg Agreement on Secondary Diking Enhancements was significantly completed. There are additional works at this site that can be completed once the water level is at the normal summer water level. During early 2004, the lower bank works required for the remaining multi-family projects was undertaken and completed. The upper bank works for these projects have been tendered, and all works will be completed by the Program sunset date of March 31, 2005. Program funds will be fully utilized.

Table FE.1

12.10 Flood Proofing Programs*

Expenditures by Sub-appropriation	Actual 2003/04	Estimate 2003/04		Variance Over/(Under)	Expl. No.
	$	FTE	$		
Capital Grants	721.1		1,251.0	(529.9)	
Infrastructure	2,219.2		3,089.0	(869.8)	

* In the fiscal year 2003/04, the Flood Proofing Program was transferred to 26.1(a) Canada/Manitoba Enabling Vote.

Revenue and Expenditure Summaries

Table RE.1
Reconciliation Statement

DETAILS	2003-04 ESTIMATES
2003/04 MAIN ESTIMATES	
MAIN ESTIMATES AUTHORITY TRANSFERRED FROM:	
- Conservation	26,383.2
- Intergovernmental Affairs and Trade	14,565.1
- Transportation and Government Services	110.3
- Finance re: Public Debt	3,749.1
- Enabling Appropriations:	
- Internal Reform, Workforce Adjustment and General Salary Increases	363.4
Restatement of Infrastructure Expenditures	
- Less: To Part B - Capital Investments	(3,696.8)
- Add: Amortization of Infrastructure Assets to March 31,2004	2,824.6
2003-04 ESTIMATE	$44,298.9

Table RE.2

Revenue Summary By Source (formerly Manitoba Conservation)

For the year ended March 31, 2004 with comparative figures for the previous fiscal year

Actual 2002-03	Actual 2003-04	Increase (Decrease)	Source	Actual 2003-04	Estimate 2003-04	Variance	Expl. No.
			OTHER REVENUE:				
217.5	313.9	96.4	(a) Fisheries Fees and Sundry	313.9	313.0	.9	
(37.0)		37.0	(b) 1997 Flood Proofing Program	-	123.7	(123.7)	1
96,546.7	65,208.0	(31,338.7)	(c) Water Power Rentals	65,208.0	93,783.7	(28,575.7)	2
214.4	412.8	198.4	(d) Water Resources Sundry	412.8	212.9	199.9	3
910.8	859.8	(51.0)	(e) Cost Recovery from Municipalities	859.8	925.0	(65.2)	
97,852.4	66,794.5	(31,057.9)	**Subtotal**	66,794.5	95,358.3	(28,563.8)	
			GOVERNMENT OF CANADA:				
4,116.4	(60.6)	(4,177.2)	1997 Flood Proofing Program Phase II	(60.6)	-	(60.6)	4
4,116.4	(60.6)	(4,177.2)	**Subtotal**	(60.6)	-	(60.6)	
101,968.8	**66,733.9**	**(35,234.9)**	**Total**	**66,733.9**	**95,358.3**	**(28,624.4)**	

Explanation Number:

1. No municipal contributions were received in 2003/04.

2. Forecasted decrease in revenue is due to lower than median water supply conditions during 2003/04 as a result of low rainfall in the summer and reduced demands for electricity in the second quarter due to mild weather.

3. Increase is due to receipt of reimbursement for 50% of the South Buffalo Drain project costs to date.

4. Flood Proofing allowance to fully offset shared costs recoverable from Government of Manitoba.

Table RE.3

Expenditure Summary

For fiscal year ended March 31, 2004 with comparative figures for the previous year.

Estimate 2003/04	Appropriation	Actual 2003/04	Actual 2002/03	Increase (Decrease)	Explanation Number
	12-1 Administration and Finance				
9.4	(a) Minister's Salary	10.8	0.0	10.8	
	(b) Executive Support				
158.1	Salaries and Employee Benefits	153.6	71.0	82.6	1
27.8	Other Expenditures	27.8	27.8	0.0	
	(d) Financial Services				
131.6	Salaries and Employee Benefits	135.6	127.6	8.0	
12.0	Other Expenditures	12.0	12.0	0.0	
	(f) Information Technology Services				
281.7	Salaries and Employee Benefits	277.2	262.5	14.7	
16.0	Other Expenditures	16.0	16.0	0.0	
636.6	Total 12-1	633.0	516.9	116.1	
	12-2 Conservation Support Services				
	(b) Survey Services				
66.8	Salaries and Employee Benefits	53.2	50.2	3.0	
66.8	Total 12-2	53.2	50.2	3.0	
	12-3 Regional Operations				
	(a) Headquarters Operations				
38.3	Salaries and Employee Benefits	39.4	38.0	1.4	
	(b) Northwest Region				
161.0	Salaries and Employee Benefits	147.9	75.2	72.7	
21.0	Other Expenditures	21.0	21.0	0.0	
	(c) Northeast Region				
145.1	Salaries and Employee Benefits	167.7	152.6	15.1	
30.6	Other Expenditures	30.6	30.6	0.0	
	(d) Interlake Region				
478.5	Salaries and Employee Benefits	506.6	420.5	86.1	
145.5	Other Expenditures	145.5	145.5	0.0	

Estimate 2003/04	Appropriation	Actual 2003/04	Actual 2002/03	Increase (Decrease)	Explanation Number
	(e) Eastern Region				
107.5	Salaries and Employee Benefits	95.3	108.5	(13.2)	
21.0	Other Expenditures	21.0	21.0	0.0	
	(f) Western Region				
914.8	Salaries and Employee Benefits	814.4	767.7	46.7	
195.7	Other Expenditures	195.7	195.7	0.0	
	(g) Red River Region				
1,290.6	Salaries and Employee Benefits	1,357.3	1,288.7	68.6	
349.9	Other Expenditures	285.2	349.9	(64.7)	
	(j) Office of Drinking Water				
811.0	Salaries and Employee Benefits	891.3	327.7	563.6	
975.2	Other Expenditures	381.5	828.0	(446.5)	
5,685.7	Total 12-3	5,100.4	4,770.6	329.8	
	12-4 Conservation Programs				
	(b) Water Management				
	(1) Administration				
314.5	Salaries and Employee Benefits	461.4	335.2	126.2	
1,714.7	Other Expenditures	1,742.3	1,725.6	16.7	
25.0	Grant Assistance	16.0	16.0	0.0	
	(2) Water Licensing				
794.7	Salaries and Employee Benefits	837.9	858.2	(20.3)	
36.8	Other Expenditures	36.8	36.6	.2	
	(3) Water Planning and Development				
1,155.8	Salaries and Employee Benefits	1,073.9	1,004.2	69.7	
80.7	Other Expenditures	72.9	71.1	1.8	
	(4) Surface Water Management				
809.2	Salaries and Employee Benefits	788.6	795.5	(6.9)	
243.5	Other Expenditures	225.3	229.8	(4.5)	
587.0	Canada-Manitoba Agreement for Water Quality Surveys	587.0	587.0	0.0	
	(5) Groundwater Management				
980.7	Salaries and Employee Benefits	883.4	841.9	41.5	
351.2	Other Expenditures	342.2	351.0	(8.8)	

Estimate 2003/04		Appropriation	Actual 2003/04	Actual 2002/03	Increase (Decrease)	Explanation Number
	(6)	Water Quality Management				
432.0		Salaries and Employee Benefits	442.1	425.9	16.2	
219.7		Other Expenditures	215.5	196.2	19.3	
4,000.0	(7)	Waterway Maintenance	4,180.7	3,837.9	342.8	
11,745.5	Total 12-4B		11,906.0	11,312.1	593.9	
	(f)	Fisheries				
	(1)	Administration				
126.8		Salaries and Employee Benefits	134.2	128.6	5.6	
196.8		Other Expenditures	195.0	204.0	(9.0)	
	(2)	Fish Culture				
671.6		Salaries and Employee Benefits	696.2	646.6	49.6	
225.2		Other Expenditures	249.6	193.1	56.5	
	(3)	Aquatic Ecosystem Management				
452.3		Salaries and Employee Benefits	414.9	451.8	(36.9)	
31.5		Other Expenditures	30.8	51.5	(20.7)	
	(4)	Sport and Commercial Fishing Management				
635.2		Salaries and Employee Benefits	629.3	619.9	9.4	
39.1		Other Expenditures	48.3	58.2	(9.9)	
410.0	(5)	Northern Fishermen's Freight Assistance	410.0	410.0	0.0	
350.0	(6)	Fisheries Enhancement Initiative	348.2	349.6	(1.4)	
3,138.5	Total 12-4F		3,156.5	3,113.3	43.2	
14,884.0	Total 12-4		15,062.5	14,425.4	637.1	
	12-5	**Environmental Stewardship**				
	(b)	Sustainable Resource Management				
88.4		Salaries and Employee Benefits	88.2	85.0	3.2	
209.9		Other Expenditures	209.9	192.8	17.1	
298.3	Total 12-5		298.1	277.8	20.3	
	12-8	**Infrastructure and Minor Capital Projects**				
4,770.4	(b)	Water Projects	5,512.9	3,473.2	2,039.7	2
4,770.4	Total 12-8B		5,512.9	3,473.2	2,039.7	

Estimate 2003/04	Appropriation	Actual 2003/04	Actual 2002/03	Increase (Decrease)	Explanation Number
	12-9 Amortization and Other Costs Related to Capital Assets				
	(a) Desktop Services				
32.8	(1) Amortization Expense – Hardware and Transition	32.8	32.8	0.0	
32.8	(3) Enterprise Software Licenses	32.8	32.8	0.0	
82.2	(b) Amortization Expense	100.2	82.2	18.0	
27.0	(c) Interest Expense	32.0	27.0	5.0	
174.8	Total 12-9	197.8	174.8	23.0	
	12-10 Flood Proofing Programs				
1,251.0	(1) Capital Grants	721.1	8,879.7	(8,158.6)	3
3,089.0	(2) Infrastructure	2,219.2	11,708.0	(9,488.8)	4
4,340.0	Total 12-10	2,940.3	20,587.7	(17,647.4)	
30,856.6.2	TOTAL EXPENDITURES FROM CONSERVATION	**29,798.2**	**44,276.6**	**(14,478.4)**	
	13-4b Manitoba Water Services Board				
1,609.1	(1) Salaries and Employee Benefits	1,614.3	1,536.8	77.5	
357.6	(2) Other Expenditures	351.2	343.5	7.7	
1,966.7	Total 13-4b	1,965.5	1,880.3	85.2	
	13-5b Financial Assistance to Other Municipalities				
10,800.0	(1) Salaries and Employee Benefits	9,839.0	11,250.0	(1,411.0)	5
3,975.0	(2) Other Expenditures	3,975.0	3,097.0	878.0	6
(2,200.0)	**13-5d Less: Recoverable from Urban and Rural Economic Development Initiatives**	(2,200.0)	(2,200.0)	0.0	
12,575.0	Total 13-5	11,614.0	12,147.0	(533.0)	
	13-8 Amortization and Other Costs Related to Capital Assets				
	(a) Desktop Services				
6.8	(1) Amortization Expense-Hardware and Transition	6.8	16.9	(10.1)	
8.1	(3) Enterprise Software Licenses	8.1	8.1	0.0	
11.5	(b) Amortization Expense	11.7	11.7	0.0	
26.4	Total 13-8	26.6	36.7	(10.1)	

Estimate 2003/04	Appropriation	Actual 2003/04	Actual 2002/03	Increase (Decrease)	Explanation Number
14,568.1	TOTAL EXPENDITURES FROM INTERGOVERNMENTAL	13,606.1	14,064.0	(457.9)	
45,424.7	DEPARTMENT TOTAL	43,404.3	58,340.6	(14,936.3)	
3,260.1	27.3/27.4 Floodway Expansion	3,260.1	0	3,260.1	

1. *Increase in Executive Support salaries and employee benefits is due to the payment of Water Stewardship Deputy Minister and secretary salaries in 2003/04.*
2. *Increase in Minor Capital Water Project expenditures is due to funding requirements for the Fairford negotiations and payment of legal claims associated with the Flood Proofing Programs.*
3. *The City of Winnipeg Home and Business Program ended March 31, 2004.*
4. *The majority of Community Dike work was completed in 2002/03.*
5. *Decrease in Financial Assistance to Other Municipalities-Sewer and Water Programs salaries and employee benefits is due to capital budget funding reduction in 2003/04 ($450.0) and project delays for Flin Flon Water Treatment and Brokenhead Water Distribution.*
6. *Increase in Capital Assistance Conservation Programs is due to expansion of existing Conservation Districts, Little Saskatchewan, Seine Rate, Upper Assiniboine and West Souris.*

Table RE.4

Five Year Expenditure And Staffing Summary By Main Appropriation

for the fiscal years ended March 31, 2000 to March 31, 2004

Main Appropriation		1999/2000		2000/2001		2001/2002		2002/2003		2003/04	
		FTEs	$(000's)	FTEs	$(000's)	FTEs	$(000's)	FTEs	$(000's)	FTEs	$(000's)
12-1	Administration and Finance	9.00	507.8	9.00	526.9	9.00	554.9	9.00	516.9	9.00	622.2
12-2	Conservation Support Services	1.00	55.2	1.00	55.2	1.00	57.7	1.00	50.2	1.00	53.2
12-3	Regional Operations	63.49	3,787.1	63.49	3,838.2	63.49	3,907.1	76.49	4,770.6	76.49	5,100.4
12-4	Conservation Programs	118.44	12,306.2	109.44	13,147.8	118.44	14,715.7	73.19	14,533.4	73.19	15,062.5
12-5	Environmental Stewardship	1.00	127.0	1.00	149.1	1.00	273.0	1.00	277.8	1.00	298.1
12-8	Infrastructure and Minor Capital Projects		3,163.8		4,084.2		4,855.7		3,473.2		5,512.9
12-9	Amortization and Other Costs Related to Capital Assets		174.8		174.8		174.8		174.8		197.8
	Sub-total Operating Appropriations (formerly Manitoba Conservation)	**192.93**	**20,121.9**	**183.93**	**21,976.2**	**192.93**	**24,538.9**	**160.68**	**23,796.9**	**160.68**	**26,847.1**
12-10	Flood Proofing Programs (formerly Manitoba Conservation)	0.00	23,478.5	0.00	28,343.2	9.00	22,342.9	6.50	20,587.7	6.50	2,940.3
13-4	Manitoba Water Services Board	30.00	1,855.0	30.00	1,838.4	30.00	1,852.4	30.00	1,880.3	30.00	1,965.5
13-5	Financial Assistance to Other Municipalities less Recoverable from Urban & Rural Economic Development Initiatives		13,370.0		12,706.0		10,585.1		12,147.0		11,614.0
13-8	Amortization and Other Costs Related to Capital Assets		26.4		26.4		26.4		36.7		26.6
	Total Appropriations	**222.93**	**58,851.8**	**213.93**	**64,890.2**	**231.93**	**59,345.7**	**197.18**	**58,448.60**	**197.18**	**43,393.5**

* Adjusted figures reflect historical data on a comparable basis in those appropriations affected by re-organization, during the years under review.

Publications

Fisheries

Manitoba 2003 Angling Guide
A Profile of Manitoba's Commercial Fishery

Water

Armstrong, N. **Assiniboine River Water Quality Study – Nitrogen and Phosphorus Dynamics, May 2001-May 2002.** Manitoba Conservation Report 2002-10

Manitoba Water Quality Standards, Objectives and Guidelines: Final draft – for additional review and comment. Manitoba Conservation Report 2002-11

Hughes, C. E. **An Overview of Water Quality in Lake Manitoba, Manitoba, Canada**. Volume 1. Manitoba Conservation Report 2002-05

Jones, G. **Phytoplankton and Microcystin-LR in the Assiniboine River at Portage la Prairie Manitoba, 1997-2001**. Manitoba Conservation Report 2002-06

Armstrong, N. **Preliminary Results from Water Quality Sampling from Red River in Response to the North Winnipeg Pollution Control Sewage Release.** Manitoba Conservation Report 2002-09

Green, D.J. and W.N. Turner. **South Tobacco Creek Manured Watershed Runoff Study, 1998-2001**. Manitoba Conservation Report 2002-02

Supply, Quality, And Use of Water in the Prairie Provinces, Manitoba edition (produced in partnership with the Government of Canada, Ducks Unlimited, Manitoba Hydro, and others).

Bourne, A., N. Armstrong and G. Jones. **Total Nitrogen and Total Phosphorus Loadings from Point and Nonpoint Sources To Manitoba Streams.** Manitoba Conservation Report 2002-04

Hughes, C. **Water Quality Assessment, Lake Athapapuskow, Manitoba, Canada**. Manitoba Conservation Report 2002-03

Legislation

The Conservation Agreements Act, C.C.S.M. chapter C173
The Conservation Districts Act, C.C.S.M. chapter C175
The Drinking Water Safety Act, C.C.S.M. chapter D101
The Dyking Authority Act, C.C.S.M. chapter D110
The Fisheries Act, C.C.S.M. chapter F90 [except Part III]
The Fishermen's Assistance and Polluters' Liability Act, C.C.S.M. chapter F100
The Ground Water and Water Well Act, C.C.S.M. chapter G110
The Manitoba Habitat Heritage Act, C.C.S.M. chapter H3
The Lake of the Woods Control Board Act, C.C.S.M. chapter L30
The Manitoba Natural Resources Transfer Act (as it relates to water and fisheries), C.C.S.M. chapter N30
The Natural Resources Agreement Act, 1938, C.C.S.M. chapter N40
An Act to ratify a certain Agreement between the Government of the Dominion of Canada and the Government of the Province of Manitoba, C.C.S.M. chapter N50
The Water Commission Act, C.C.S.M. chapter W50
The Water Power Act, C.C.S.M. chapter W60
The Water Resources Administration Act, C.C.S.M. chapter W70
The Water Resources Conservation and Protection Act, C.C.S.M. chapter W72
The Water Rights Act, C.C.S.M. chapter W80
The Manitoba Water Services Board Act, C.C.S.M. chapter W90
The Water Supply Commissions Act, C.C.S.M. chapter W100

and:

Manitoba Fishery Regulations made pursuant to section 43 of the *Fisheries Act* (Canada)

As per Schedule "Q", Order-In-Council 395/2003